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AMERICAN CINEMATOGRAPHER

THE MOTION PICTURE **CAMERA** MAGAZINE

VOL. 28 JUNE, 1947 NO. 6

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ON THE FRONT COVER—Bing Crosby and Bob Hope rehearsing a scene in carnival set at Paramount for "The Road to Rio." Director of Photography Ernest Laszlo, A.S.C., is watching action behind camera on crane at upper left; while Director Norman McLeod is seated in front of Crosby. Photo by Jack Koffman.

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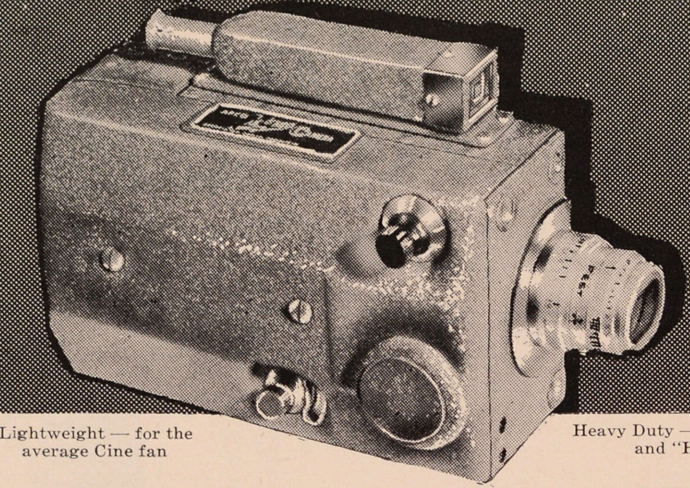

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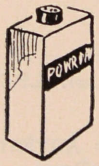

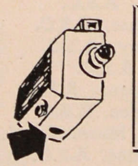

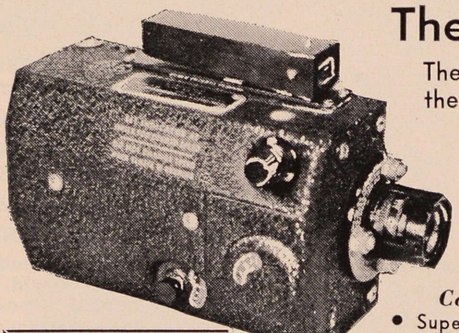

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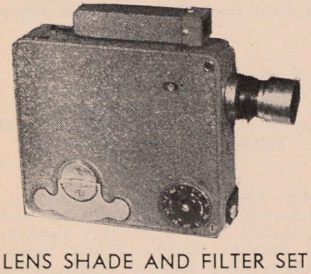

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MAGNETIC TAPE SOUND RECORDING

RESEARCH and improvements in magnetic tape recording, with the possibility that this procedure and technique might eventually be adapted for economical recording of sound tracks for both amateur and professional motion picture production, is currently creating widespread interest.

Because of such interest in the future potentialities of magnetic tape recording; especially for sound track accompaniment for 8 and 16 mm. pictures in the amateur field; it was felt that an article presenting a resume of the magnetic recording methods would be particularly informative at this time. There is also the possibility that future development and improvement of magnetic sound recording will allow for use of this type of system in various stages of regular motion picture sound practices from the original recording at the time picture is taken, up to the point of making the final sound negative for release prints. Already, a great deal of activity is taking place inside the studios in use of magnetic recorders, where sound quality is secondary.

Magnetic recording is not new, although it has made great development strides during the past decade. The first magnetic recording instrument was originally built by Valdemar Poulsen in 1898, and was called the Telegraphone. Thirty years ago, the method was proposed for synchronization with films to provide talking pictures, but when sound was added to the films 10 years later, it was via optical recording rather than magnetic.

Several Methods

A number of companies and groups are currently pressing research and improvements of magnetic recording, and the sum total cannot be less than eventual introduction of highly efficient equipment for practical uses, together with economy and convenient operation.

Various bases can be utilized. Steel tape, wire, paper or plastic tape are now being developed. The base is coated with a thin layer of magnetic powder, with thickness of about 0.6 mil. Experiments have disclosed that a narrow magnetic sound track can be deposited on 8, 16 and 35 mm. film prints for reproduction when pictures are projected.

The tape or other magnetized strip is threaded through the recorder, with the signal transmitted through the microphone pickup agent deposited magnetically thereon. If the "take" is not satisfactory, it can be wiped off by a de-magnetizing run-through in the machine, and the same surface used again and again for other recordings. The original can be reproduced repeatedly without loss of sound quality. Also, specific words, groups of words, or sounds not wanted can be wiped off by de-magnetization on specific sections of the tape, without disturbance of sound signals desired to remain.

At this point, it seems that the initial practical use of magnetic recording for films will be in the amateur 8 and 16 mm. fields. This is particularly important for the paper tape system, which is both economical and convenient. For those amateur movie enthusiasts who do not feel inclined towards the expensive method of optical recording, especially when only one or two prints are required for personal use, magnetic tape recording indicates it will assist to solve the problem.

The paper tape media also can be cut and spliced (with ordinary Scotch tape), without disturbance or clicks on the sound track when run through the machine for reproduction.

SMPE Presentation of Papers

A most informative group of papers on magnetic recording and devices was presented at the October, 1946, convention of the Society of Motion Picture Engineers, and published in the January, 1947 issue of the SMPE Journal. Abstracts from several of these provide basic information on the progress of development of magnetic recording, and possible uses by the film industry for both recording and reproduction in the future.

S. J. Begun of the Brush Development Company, Cleveland, Ohio, summarized his paper, "Recent Developments in the Field of Magnetic Recording," as follows:

"New magnetic recording media have been developed during recent years which will widen substantially the field of application for magnetic recording equipment. Probably most outstanding among the new recording media is the non-ferrous wire or tape, plated with a thin layer of nickel-cobalt alloy, and the paper disks and tapes coated with a dispersion of magnetic powder.

"It might be of particular interest to the motion picture industry that the coated recording media can be perforated to obtain synchronization between picture and sound. It is also possible to apply the magnetic coating directly to the film base."

Begun stated in his paper, "It is only now that recording media are available which use a coating of finely dispersed magnetic powder applied to a plastic or paper base; and it was in 1928 that Pfleumer, in Germany, made the first practical attempt to apply a magnetic coating to paper or plastic material for use as a recording medium. But in this country, little attention had been given to the development of coated magnetic recording media until in 1939, the Brush Development Company started experimental work in this field. This activity was greatly accelerated during the war.

"Only about 10 years ago," he continued, "it was considered necessary to have the recording medium move with a speed of two to three feet per second, to cover a frequency band wide enough for low, or possibly, medium quality sound recording. With the coated recording materials it is now possible to go up to about 5,000 cycles with a speed as low as 7.5 inches per second.

Later, Begun points out that "Up to this time it has been considered impossible to obtain any worthwhile sound recording on 8 mm. film. The speed of 8 mm. film, assuming 24 frames per sec, is a little better than 3.5 inches. With magnetic recording a quality can be obtained which is good enough for speech intelligibility and it appears that for amateur applications, 8 mm. sound film is now in the realm of possibility. Of course, if a magnetic recording track is provided on 16 mm. film, the quality of reproduction is certainly adequate for amateur use and most likely even for professional applications."

Magnetic Track for Films

The paper by Marvin Camras, of Armour Research Foundation, Chicago, described the feasibility of magnetic sound track on motion picture film. Advantages of magnetic recording, he pointed out, include: simplicity, low cost of the magnetic system, immediate monitoring if desired, no processing, magnetic record medium can be erased by demagnetizing and used over again, parts of sound track can be edited by erasing, and dubbing in of new sound; and no serious distortion with overmodulation. As against this, he disclosed magnetic recording disadvantages — head contacts the record with possibility of wear, and technical performance not quite equal to the best possible with advanced optical methods. He did, however, explain that the above listings are based on the present state of the art. Camras then described the technical phases of the construction and operation of the magnetic sound heads and use for recording on film.

Another paper, "A Magnetic Sound Recorder of Advanced Design," was presented by R. J. Tinkham, president, and

(Continued on Page 218)

PAINTING WITH TECHNICOLOR LIGHT

By Herb A. Lightman

WHEN "Forever Amber," the Twentieth Century-Fox filmnization of Kathleen Winsor's controversial best-seller, reaches the screen within the next few months, the usual battle will probably rage as to whether or not the film is faithful to the novel, etc., etc., etc. While a certain segment of the audience may object to the whittling down of the astronomical number of Amber's lovers to an easily-handled brace of six, there is at least one point on which practically everyone will agree: that is the excellence of the Technicolor photography of this photoplay.

Filmed in Technicolor, "Amber" is the work of Director of Cinematography Leon Shamroy, A.S.C., whose reputation as one of the industry's top color photographers is attested by the three Academy award "Oscars" which he has won for photographing "The Black Swan," "Wilson," and "Leave Her to Heaven"—all Technicolor productions. "Forever Amber" bids fair to win additional acclaim for his highly individualistic style of "painting with light."

The photography of this film is characterized by smoothly modeled lighting which gives depth and substance to the sets and characters. There is an abundance of mellow candlelight and a compositional approach that makes the situations seem like fluid tapestries. The whole effect is one of mellowness punctuated by staccato bursts of visual brilliance.

Emotion in Color

Shamroy's approach to color cinematography is *emotional* as well as technical. He feels that in order to assure the desired audience reaction to a given sequence, the director, cinematographer, and art director must first agree on the dominant mood required in that sequence, and then all work in the same direction to capture it on film.

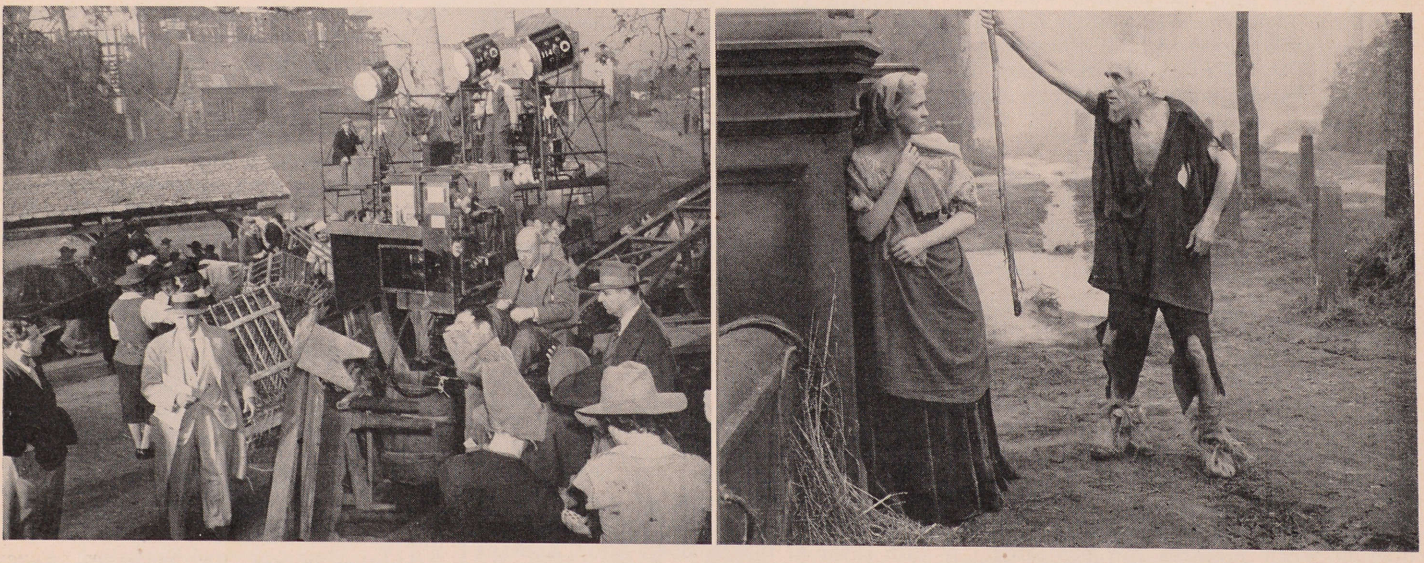
He strongly emphasizes the importance of cooperation between department heads in planning the artistic approach to the film. On "Forever Amber," not a set was built or a costume created until it had received his "okay for camera." He worked closely with director Otto Preminger and set designer Lyle Wheeler to see that a consistent approach was preserved in every phase of production.

In conference regarding technique, he feels that the cinemotographer should make the final decision, since he is the one who will actually be responsible for recording the action on film.

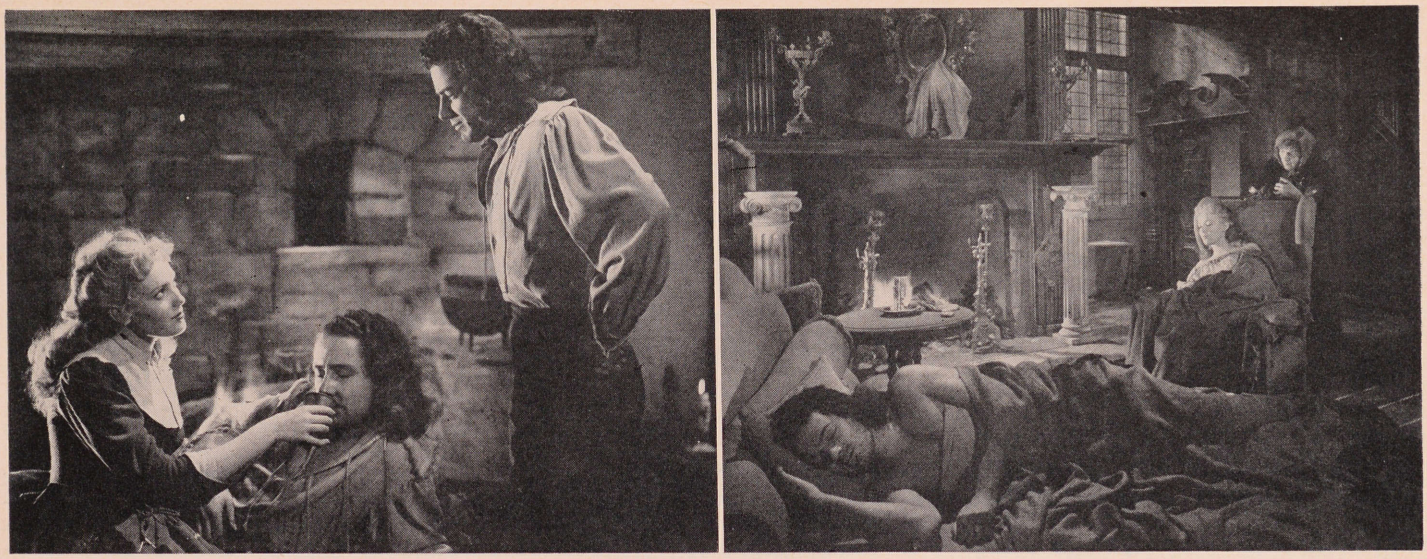
Each sequence of a photoplay has its own emotional pattern which, once defined, may be enhanced through the correct use of color. Once having established a mood, Shamroy perfects a lighting pattern to fit it precisely—knowing full well that he is in no danger of repeating that lighting set-up, since rarely (if ever) is the same mood encountered in two sequences of the same picture.

Working with the established mood as a basis, he intensifies the emotonal pattern of a Technicolor scene by *painting* it with colored light—that is, adding areas of "cool" or "warm" light where they will add force to the scene. A particular situation, for example, may demand a *cool* mood to compliment the action planned; in which case the use of blue and green gelatin slides over the secondary lighting units will add to the effect. Where *warm* emotions are to be portrayed, the use of amber or raw incandescent light adds to the effectiveness of the scene.

Shamroy studies each composition as he would a painting, decides which areas (in relation to the source of light and emotional pattern of the scene) demand warm tones and which would benefit by cooler tones. He then "paints" the composition with the appropriate variations in hue, balancing one against the other, and always making sure that the true color of the set is allowed to remain in selected areas. "It is important that we preserve the true colors of the set in part," he points out, "so that there



Left: A production shot taken during filming of the Twentieth Century-Fox film, "Forever Amber." A battery of sunlight arcs is set up on an exterior scene to provide proper fill illumination. Director of Cinematography Leon Shamroy, A.S.C. (at left, in hat and coat), studies the composition, while Director Otto Preminger (seated next to the Technicolor camera, irght) prepares to study the action. Right: A scene from the plague seqeunce of "Forever Amber," indicating the flat lighting and monotone grays which give this sequence a feeling of realistic horror.



Left: In filming "Forever Amber," Director of Cinematography Leon Shamroy, A.S.C., has achieved a mellow style of lighting especially well adapted to portraying the candlelight and firelight which characterize the story's situations. Right: Scenes such as this were carefully lighted to convey the mood and emotional pattern previously set by the director, art dirctor, and cinematographer. Shamroy "painted the set with light," adding warm or cool tones where they were most effective.

will be a basis from which to work in blending the hues of the auxiliary or 'mood' lighting units."

He employs colored light in the manner that a painter uses a brush tipped with subtle shades of pigment, adding a dash of warm tone here, a touch of cooler tone there, until the balance is correct for the emotional pattern of the scene.

It is this technique that has earned him the reputation for painting with light—a technique distinctly opposed to the theory of some cinematographers who believe that white light only should be used for Technicolor, the shades of settings and costumes being allowed to account for color contrast.

Color Emphasis

"Visual emphasis within the scene depends upon how selectively color is used to point up the action," Shamroy explains. "For this reason, an important area or costume should be given enough color to attract the eye, while everything else in the scene is restrained. Since the audience cannot pay attention to two centers of interest at the same time, it is not good cinema to have two units of brilliant color fighting for attention; one or the other must dominate."

In keeping with this point of view, color merely for the sake of color should be played down in order that it may be used forcefully when a dramatic moment occurs. In "Amber," the plague sequence is done in somber tones of gray, with a studied flatness that emphasizes the quiet horror of the situation. Of this sequence, Shamroy says: "There is a grisly squalor to the whole mood, creating an impression of the withering hand of death abroad in the land. There is a certain beauty in squalor, because any little patch of color that may be present stands out with a clarity and sharpness that can be very striking.

In his approach to realism, Shamroy strives to project an illusion of reality without unduly emphasizing harshness. He works on the theory that in every situation, no matter how stark, there is an underlying warmth which must be allowed to show through for effective dramatic contrast. This theory was demonstrated quite forcefully in his photography of "Leave Her to Heaven," a photoplay in which exquisite lighting and composition served to exaggerate the venomous nature of the main character.

In "Forever Amber," it was a difficult task to simulate realism, since the lush settings and costumes of the period were in themselves so colorful that they were bound to seem unreal as compared to modern motifs. With this in mind, the production chiefs assigned to the film were especially careful to avoid the "extravaganza touch" which so often lends a note of unreality to films portraying a colorful period in history. "We are more interested in a warm, intensely human story than we are in the spectacular," explains director Otto Preminger. "We have tried to do the picture in a very natural and very simple way, shying away from what Hollywood calls an *epic.* Moviegoers no longer care very much for epics, it seems. They want good human stories about very real people."

Staying in line with this approach, Shamroy, in filming the story, achieved a fine balance between his illusion of reality and a faithful reproduction of the lusty glamor that prevailed in England during the reign of Charles II.

An Art in Itself

Leon Shamroy considers Technicolor cinematography a vital art form which, while having some compositional rules in common with black and white photography, differs from it widely in every other respect. The big difference lies in the application of *color* as a complement to *drama.* It is not merely a matter of high or low-key lighting, but a task of matching colors of light to varicolored emotions.

He draws his inspiration from the works of famous painters—admiring the subdued warm tones of Rembrandt's work, and the luminous color and photographic detail of Ruben's painting. He also likes the verve displayed in the less abstract schools of modern painting. During his apprentice years, he knew and worked with many contemporary artists whose cumulative influence is evident in the artistry of his present style of lighting and composition.

His compositions have a *modern* feeling, a strong sense of line and movement which directors find valuable in presenting action from the most forceful angle. His use of color is bold without being jarring. He does not, for example, like to use much red, preferring to reserve this brilliant color for scenes which require the ultimate in emphasis.

Although his style as a cinematographer has its roots in art, he is no blind "art for the sake of art" devotee. He is well aware of the market for which his talents must be slanted. "After all," he points out, "the professional cinematographer is helping to *sell* a screen story to the audience. He has a definite responsibility to present the producer's product to best advantage."

It is Shamroy's fine balance of art with box-office that makes his photography so widely appreciated in Hollywood. Never sacrificing one for the other, he manages at the same time to satisfy the art critic, as well as the producer, whose appreciation of art often does not extend beyond enthusiasm for the designs made by black figures on the credit side of the ledger. In "Forever Amber," he seems once more to have achieved the unbeatable combination.

One Man Photographic Expedition To Sweden

By Ray Fenstrom, A. S. C.

A FEW weeks after I finished shooting "The Last of the Redmen" in Vitacolor for Columbia studios in Hollywood, I sat one day with Jerry Altfilisch, who had just formed Pictorial Productions. We started discussing personal picture experiences, people we knew, and yarns of the trade. Then we veered onto the subject of places—where we had been, those countries we would like to see for the first time, and those worthy of visiting again. He told his story about the flight with the Flying Hendersons, and I recited my flight to Labrador in 1928 to secure pictures of the German and Irish flyers who had succeeded in flying the first East-to-West jump over the Atlantic. Then we got on the subject of pictures in color. Result of the original informal talk is my present trip through Europe, which started in Sweden last December.

From Hollywood I flew TWA with 490 pounds of excess baggage, which included lights. After a spell of preparation in New York, I took off one Saturday morning aboard a DC4 of the Scandinavian Airlines System—which is truly sloganed a "United Nations of the Air." Sweden, Norway, and Denmark have joined hands to form this International airline. Insignia, composed of shields of each country, is the most colorful on any line in the world. The light blue and yellow of Sweden; the red and white of Denmark, and the red, white and blue of Norway. It photographs beautifully, as does the bright blue Viking ship design painted the entire length of the big plane. I had an even heavier load than when I first arrived in New York, but we were few passengers for the trip and the airline personnel took extremely good care of my equipment. It is but 19 hours from New York to Stockholm—the capitol of Sweden. First stop was at Gander, Newfoundland; next morning it was Prestwick, Scotland; then a stop at Norway's capitol city, Oslo; and finally Stockholm that evening.

Stockholm's Growth

At my first glimpse of Stockholm from the air, I realized that Sweden had greatly changed since my last visit in 1933. My first article for the AMERICAN CINEMATOGRAPHER was written from here in 1925 after I returned from the North Pole assignment with Amundsen and Ellsworth. John W. Boyle, A.S.C., and I made the first feature length color film in Sweden in 1931. But John wouldn't know the place now. Stockholm has grown—from 300,000 then to nearly 800,000 now. Beautiful and very colorful apartment homes have sprung up far out into the country where John and I shot tiny homes of that year. We drove out then into the country in a rented car. Now streamlined streetcars still painted light blue; electric busses in bright red; and fast taxis; whisk one out in no time at all. A rapid transit system had to be built to take care of the rush to the city before and during the war, which the Swedes fortunately managed to keep out of.

Production Problems

The problems of shooting pictures here are about the same as at home, except the color of light for shooting colorfilm. Luckily I have a Harrison color corrector and set of correction filters. The winter light is very, very weak. The day starts at 10 and finishes at three. Shooting color is imposible except when the sun shines, which it did this winter once in two months. So I decided on interiors.

Jerry Altfilisch and I had planned a real human interest series to be designated something like, "The World Your Neighbor," how he looks, lives, works, and enjoys himself. No one ever sees the other fellow as he actually is, or tries to understand him. We felt—and still feel—if all neighbors get better knowledge of each other from within the home, a true United Nations spirit may be created.

So my first job had a working title of "At Home In Sweden." For it, I sought a typical middle class Swedish home, with average furnishings. I found that all Swedish homes—because of retention of family heirlooms through many generations—contained a mixture of the modern with the old and the antique. For example—in the family home I finally selected—they had stainless steel in the kitchen, old polished Swedish copperware, and both gas and electric ranges. Their family Bible had been in the same family since 1760. All through the house one could spot the old, beautifully blended with modern Swedish furniture. The open corner fireplace in the living room was a copy from an old farmhouse—but as modern as the stainless steel.

After my first survey, I realized that I would need many more lights than the 12 I had flown over. The house circuit was 220 volts, and not heavy enough to carry the load required. After searching for a friend in the local picture business, I finally lined up what I felt was needed. I rented 25 more lights, all larger than my own. Latter were mostly spots and photofloods. I rented cable and hired the best electricians available from the union. I had to get the city power company to install a meter at the street, and we ran 300 feet of heavy cable from there to the home. Costs are about the same here as in Hollywood, and requirements almost similar. I had a full union crew throughout, and they were collectively and individually very excellent workers. Once they found out what I wanted, they worked carefully and efficiently. We had a lot of fun explaining both Swedish and American studio vernacular and slang to each other.

Lighting equipment here is quite similar to ours as used in the Hollywood studios, and—from baby spots to arcs—most are made here. To use my 110 volt lights, I had to split the 220 line, but had no trouble, except that the electricians had to comb the town for plugs and wire. There is still a great shortage of material here.

Second Swedish Production

For my second picture here, I chose a new approach to the idea of telling a story. It came from my notes on the original impressions—seeing Sweden and Stockholm the first time after 13 years. Everywhere were streetcars. They may be disappearing elsewhere, but here they are definitely on the increase. All of them are painted a shiny light blue. Whether they are old or new—like the one I feature in my tale—they are clean and immaculate as Swedes. In the old cars no one is allowed to stand inside the car. The new streamlined beauties have 33 seats and straphangers' places for 77. They are long, tall, silent, and swift as gazelles. They stop and start faster than any car I ever saw. The quiet electrical parts are built in Sweden by their "General Electric of Sweden"—

ASEA. The body was built by General Motors Nordisk Co. It was one of these cars which gave me the idea for my second picture. They look so smooth and pretty, I compared these cars with tall, young girls. I hope Jerry Altfilisch uses my plan to let our little heroine—the car—speak with a feminine voice, telling her own story of Stockholm today, as she "sees" it.

My next one I hope to make a musical novelty, using some new ideas quite European in photography. Will write more about that later.

Modern Swedish Production

During my four months here, I have met most of the producers and technicians. I included one company working on location in my last film. They had booster inkies, DeBrie sound camera with a barney, and had a dishpan light under it to keep it working in near-zero weather. Equipment seems adequate for the way they shoot here, and the results are very good. Swedish producers had the war years to build up film production with no outside competition to speak of. Now every American film shown runs to capacity houses. All seats are reserved, and—in a land of paper makers—they use tissue-paper tickets that are almost impossible to find if once slipped into one's pocket.

Each camera has but three men—cameraman, assistant, and slate boy. Mike booms are light and very portable. Recording, generator trucks, reflectors and lights are good, but the Swedes do not have the imagination that we have in Hollywood studios. Here they tend to all think alike, regardless. Their production speed is very slow, but overall production time is not much longer than in Hollywood. Costs are nevertheless high, but producers are not poor here either. Sweden is the most movie-going country in the world. Stockholm has nearly as many movie theatres as restaurants—and it seems the natives eat all the time. Two breakfasts, a long lunch, dinner, supe and a vikning—which can be any time between supe and the first breakfast.

Swedes Love Living

No one works holidays or Sundays—double costs if they do. The day before a holiday is usually a half-day session. Holidays are numerous and Swedes look forward to them. Everyone in the picture business seems to have two homes, one in town and one in the country; commuting between them at the slightest provocation winter or summer. In summer, boats take up where cars, skates and skiis leave off. They love sports of all kinds. There is also the greatest inviting-and-being-invited custom here. If one lives through it, he can make pictures. One no sooner meets a person before the routine begins, and try to change the custom to suit your own American ways. You are invited home to dinner. You go, and don't forget to bring flowers. Sit down at six, and never stop until two in the morning—either sipping or eating. Then return the visit by inviting him to dine.

Some time during all that campaign you try to get your job of picture-planning done. Then shooting starts, getting in a couple of good days and being quite pleased with yourself the middle of the following day—when suddenly everybody starts losing interest in production matters, wanting to quit—for the next day is a holiday and everyone has to get ready for it. Two days later, you try to get started again. If it has snowed, you can be sure at least half of your people are stuck out at their country homes, but do telephone to advise of their delays. You try to carry on without them. Somehow the job gets finished. Then you deliver the film to the lab., and are told there will be no processing until the following Wednesday. There are two holidays in between. So they dump the soup and take a vacation until then.

Exporting Procedure

Before shipping the film to Holywood—after you have sweated out the two pictures originally planned and shot, there are a few formalities any professional producer-cameraman has to wade through. First, the Government wants to take a look at everything you have shot. They report to the Military authorities anything not wanted shown. You lose that film. When you get a clean bill of health from them, they seal your packages-of-labor, and you apply for an export license. This can take from two days to weeks; but I had luck. It only took three days, thanks to the valuable help of friends. Then there remains the American Consular Invoice—cost nine kronor, or two dollars and fifty-two cents. Shipping film usually consumes from one to two weeks, for the details required entails a city-full of running around. Everything in Sweden is expensive, and equals our own high cost of living—at times, exceeding it. Here you don't just get a hotel room and try to hold it. You pay for heating it too. That cost varies with the weather, and it has

(Continued on Page 219)

SCENIC LOCATION—Greer Garson stands on the scenic bluffs overlooking the Pacific Ocean at Monterey, California, for a scene for the Metro-Goldwyn-Mayer production of "As You Desire Me." Director of Photography Joseph Ruttenberg, A.S.C., is at right of Camera.

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LLOYD KNECHTEL, A.S.C.

By ROE FLEET

WHEN Lloyd Knechtel, A.S.C., was still in high school, he selected motion picture photography for his life work. This decision undoubtedly was dictated by the fact that his older brother, the late Alvin Knechtel, was already established in Hollywood in that field. So Lloyd started at the bottom for practical experience—as a handy-man and general assistant in the still motion picture laboratories of Detroit Motion Picture Company during school vacation and part time. This apprenticeship was invaluable, and—coupled with hero worship of his older brother—he passed up a law course at University of Michigan in favor of photography—and hopped to Hollywood to become a general assistant to Alvin on the coast staff of Pathe News.

By that time, brother Alvin had already established a reputation in the industry as a pioneer and expert on optical printing and special effects work, and it was natural that Lloyd obtained invaluable training in that branch of motion picture photography. Soon he was given a Debrie camera to use on newsreel coverage on the coast; and some of his interesting assignments of that period included the funeral of Rudolph Valentino; naval maneuvers off the coast of California; the Aimee McPherson disappearance and return; return of Charles Lindbergh to California following his solo flight to Paris; and numerous football games. In those days, the newsreel boys concocted air stunt clips that involved wing walking on the old OX5 type Jenny planes which were generally flown by Col. Arthur C. Gobel, who in later years won the Dole race to Honolulu.

During this period, Alvin devised and produced many trick short subjects for Pathe Review. With the work done nights at his garage, it was natural that Lloyd, after his day's assignments as a newsreel cameraman, would be the assistant on the projects. A wooden platform had been constructed and bolted into concrete to house a very early model of optical printer. On one end was a Bell & Howell camera, while on the other was mounted a Pathe camera. The latter served as a printer head with a light shining through the movement. The B&H served as a photographing camera to optically reproduce the image.

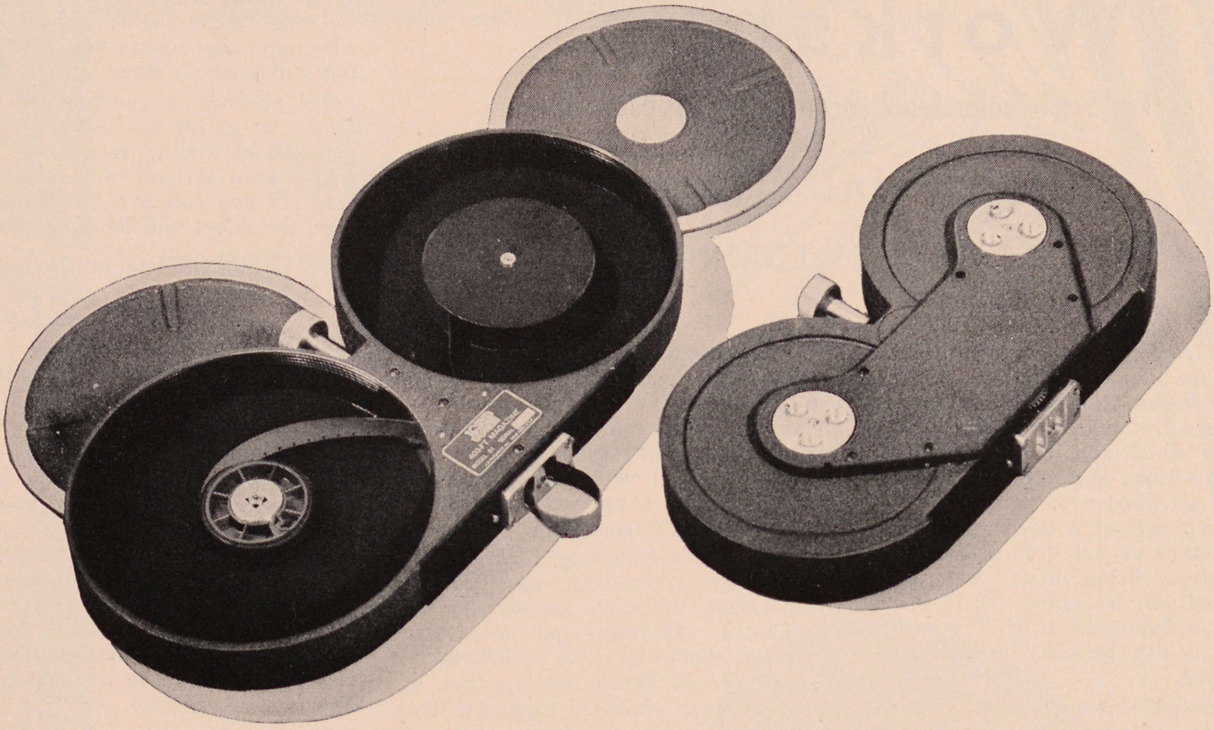
Mechanical drive and elaborate gadgets? Not in those days. All work was done a frame at a time, stop motion. Alvin was at one end, while Lloyd was stationed at the other, turning the stop motion crank. The particular type of trick photography used in those days involved the reduction and multiplication of one figure. In one instance 36 babies were shown—all from the same image—watching itself on the screen, with a Walt Disney type animal orchestra playing in the pit!

Also, a short on Gene Tunney was made in advance of his famous fight with Jack Dempsey at Philadelphia. The film with many Tunneys of reduced size in training poses, were shown on the same frames while full-sized Tunney looks on with approval. Being made in advance of the fight, prints of the subject were in the Pathe exchanges and thus able to be projected on theatre screens immediately after the fight was over. The garage optical printer and special effects layout accomplished many trick photographic subjects which proved very popular in those early days.

Result was that, because of widespread comment within the industry, brother Alvin was given a term contract to jointly head the trick department of First National with Ralph Hammeras, A.S.C. The present stage 5 on the Warner lot was originally designed by them; and it is now recognized as a top department of its kind in the Hollywood studios.

On the advice of brother Alvin, Lloyd stepped out to gain practical production experience, and became assistant cameraman to George Stevens on "Desert Flower," a wild horse feature which Fred Jackman, Sr., A.S.C., produced for Hal Roach. It proved to be great experience, as both producer Jackman and Director of Photography Stevens were recognized as splendid craftsmen in the photographic field. After working on a number of features in the studios and on location,

(Continued on Page 221)



GEAR-DRIVEN magazines on the Maurer 16-mm

On the new Maurer 16-mm Professional Motion Picture Camera, *the magazines are gear-driven.* There are no belts, no pulleys. When the direction of drive is reversed there is nothing to change on the magazine. Feed and take-up are automatic.

The magazine will take laboratory-packed film on cores *and* daylight loading spools, as shown in the illustration — another example of Maurer versatility. Positive-action light traps open automatically when the magazine is attached to the camera, providing a clear passage from the magazine both into and out of the camera.

Magazines are available in three sizes: 200-foot, 400-foot and 1200-foot capacity.

All Maurer magazines are interchangeable between the new Camera and the new Sound Recorder, as well as being interchangeable between the new and older equipment.

16mm maurer

This advertisement is the fifth of a series explaining the features of the Maurer 16-mm

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The Cinema Workshop

(For Semi-Professional and Amateur Production)

12. Special Effects

By CHARLES LORING

SPECIAL EFFECTS, strictly speaking, are not out-and-out camera *tricks* designed to surprise, mystify, or amuse the audience. Rather, they are devices which the cinematographer uses to save time, expense, or effort in presenting an illusion of reality on the screen. The proof of a good special effect is whether or not it is detected by the audience as being in any way false to the situation portrayed. If it looks fake, it is a failure; but if it goes by unnoticed, it can be considered a successful effect.

In Hollywood, elaborate special effects departments equipped with complicated devices produce illusions which save the studios millions of dollars annually. From these professional effects, we shall select and discuss a few which the semi-professional can produce with a minimum of effort and special equipment.

Miniatures

Miniature settings and props are widely used in professional production to produce effects which could otherwise not be staged except at prohibitive cost. When huge factories are shown blowing up or catching fire, when ships battle at sea, when automobiles careen off of cliffs, when floods engulf an island—the long shots of the action are almost always staged through the use of miniatures.

A person skilled in building model airplanes or ships can usually adapt his talent to the creation of miniatures for the screen. These models can be built of the cheapest materials, but must be skillfully executed and painted so that they look realistic. If possible, work from photographs of the actual subject. Be sure the tiniest details are included, or at least suggested. Models should be "aged," if necessary, with an air-brush to play down the overly-neat appearance that a freshly painted model usually has.

If the camera angle has been decided upon before the model is built, the designer may force perspective in construction so that the model will seem to have more depth. This effect can be intensified through the use of a wide-angle lens during filming.

In lighting a miniature outdoor set, the source should be a strong key light with little or no *fill*, in order to simulate the harsh light of the sun. The ideal camera angle is a three-quarter oblique pointing down toward the subject from about a 45° angle. A background utilizing three dimensional elements (such as model trees, etc.) will give a more realistic effect than a painted backdrop.

When action is shown in a miniature setting, it must be slowed down so that it will appear smooth and natural. Professional miniature scenes are usually shot at 128 frames per second, but the effect should be quite satisfactory if shot at the 64 frame setting that appears on many standard cameras. Thus, if a fire is shown, the flames will seem to be leaping into the air at a speed in keeping with the size and scope of the actual setting.

One last rule on miniatures is that they should not be held on the screen long enough for the audience to analyze them too closely and perhaps spot evidence of how the effect was achieved. Use such scenes for brief establishing long shots; then cut to closer life-size shots of the same situation, tying in as many visual elements of the miniature setting as possible.

Fog Effects

The effect of *swirling* fog is usually produced by filling an enclosed set with chemical vapor which is blown about by wind machines. This expensive and rather complicated process is beyond the reach of most semi-professional producers—but a very satisfactory effect of stationary fog or haze can be produced by the use of special filters used in front of the lens.

Filters especially developed for such effects include the Harrison & Harrison series, Nos. 1 to 6 (depending upon the density of the fog desired) and the George H. Scheibe filters, Nos. ⅛ to 5. Under ordinary conditions these filters require no additional exposure.

If special fog filters are not available, a passable effect can be achieved by placing one or more thicknesses of cheese cloth or loose gauze in front of the lens, as close to the element as possible. Such scenes should be shot at the widest practical aperture in order that the mesh of the gauze will not come into any sort of sharp focus.

Lighting for a daylight fog scene should always be rather flat. In a night scene the key should be relatively low. Never shoot fog scenes in direct sunlight; wait for a cloudy or overcast day so that the effect will seem natural. When using filters or gauze in front of the lens, be careful not to *pan* or otherwise move the camera too rapidly, as the fog will seem to move with the lens.

To produce a *swirling* effect when filters or gauze are used, place smoke pots out of camera range and blow the smoke onto the set with small electric fans. If you can avoid choking the actors, the effect will be quite realistic.

Night Effects in Daylight

It is standard practice in professional filming to shoot exterior night shots in sunlight, the effect being achieved through a combination of filters and exposure control.

A medium speed film, such as Eastman Plus X, Ansco Supreme, or Du-Pont 2 is the best type of emulsion for night effects, assuring sufficient speed and contrast. Filters which give best results include the 25A and 29F, which (when used in strong sunlight against a blue sky) simulate a very convincing moonlight effect. A combination of 56B and 23A filters creates a softer night effect, very much in key with romantic and mystery themes.

Simulated night scenes should very definitely be exposed for the highlights, with shadows being allowed to go dark. Underexposure of one to two stops will intensify the effect—but be sure to inform your film laboratory that you were filming *night* shots. Otherwise (thinking that you have merely underexposed) they will compensate in printing and the scenes will look light and washed out.

In shooting night scenes in daylight, several elements should be considered. Firstly, try to shoot on days on which the sky is a rich blue, so that your filters will be able to darken it down sufficiently. A white or "baldy" sky will not respond very well to the correction of orange or red filters. For the same reason, try to place your action so that you are shooting toward the darkest part of the horizon.

When shooting close-ups of people through a heavy red "night" filter, flesh tones will usually look chalky and unnatural unless your subject wears a fairly dark shade of panchromatic grease-paint.

Fairly satisfactory night shots in color can be achieved by using a medium blue filter, such as the Harrison B3. Instead of compensating two stops for the factor of this filter, shoot the scene at the meter reading (thus actuallly underexposing by two stops) and the resulting low-key scene with its blue overcast will pass for a very reasonable facsimile of clear moonlight. It may take some degree of experimentation to find the right combination of filter and underexposure to achieve night shots in color

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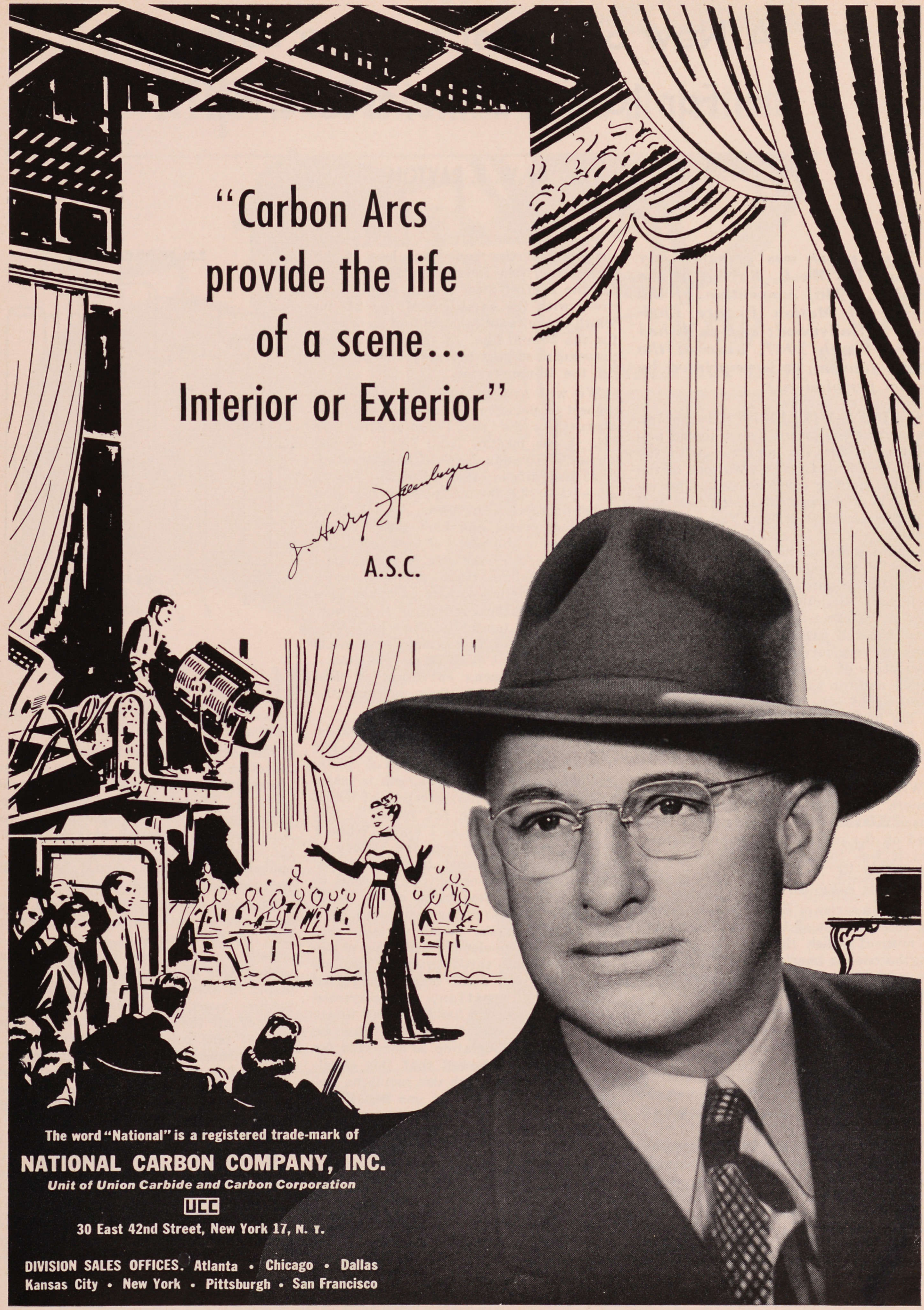

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A New Series of Camera Lenses For 16mm Cinematography

By W. B. RAYTON

(This paper was presented by the late Dr. W. B. Rayton at the October, 1946, convention of the Society of Motion Picture Engineers in Hollywood; and published in the March 1947, issue of the SMPE Journal. It is re-printed by special permission.)

SIXTEEN-MILLIMETER motion picture equipment was designed primarily for the amateur with the inevitable result that cost was one of the principal guiding considerations. This involved both the optical systems as well as the mechanical design. The possibilities inherent in 16-mm motion pictures for more serious work engaged the attention of the camera makers before it received adequate attention from the projector designers, and yet it seems as if even the camera makers have not realized the full possibilities of the 16-mm art until very recently. We have heard a description of a new 16-mm camera designed not for the amateur but for the professional—one that can stand beside its big brother, the 35-mm camera, and do everything the latter can do except for such limitations as may be imposed by the grain size of the emulsion.

With such a conception of the 16-mm camera it is logical to equip it with lenses in every way comparable to those used on the professional 35-mm camera, and it was to make this possible that the series of lenses described in this paper was designed.

This is a series of Baltar lenses containing focal lengths of 12.7, 15, 17.5, 20, and 25 mm, of which the four latter focal lengths can be carried on the turret of the new Mitchell 16-mm camera. Their relative aperture is $f/2.3$ for all focal lengths. They are designed to produce pictures not only equal in sharpness to those produced by the longer focus Baltars in the 35-mm cameras, but pictures that exhibit the same indefinable characteristics of excellence that produce an impression of something more than mere mechanical perfection..

The lens design is a familiar one consisting of four meniscus-shaped components with each of the two inner components consisting of two elements cemented together. Advantage has been taken, however, of new high index glasses, developed since the war began, to obtain practical perfection in the correction of spherical aberration, astigmatism, and curvature of the field. Each lens in the series has been independently designed for the field of view it was required to cover with the exception of the 25-mm which is the same construction as is used for the 35-mm film. In this case no improvement seemed necessary or possible for the 16-mm frame.

We will now go into more detail in respect of performance and correction of aberrations for the 17.5-mm lens, for this is the median focal length of the series. The residual spherical aberration is so insignificant that when this iris is closed to $f/2.8$ the image of a star is a pure diffraction pattern. Actual tests with red, green, and blue filters reveal no change in the plane of best focus and the difference in the size of the images formed by these three primary colors differs by not more than one part in a thousand. At the corners of the frame the images of tangential lines lie on the focal plane and for radial lines about 0.001 in. in front of it. In more technical language, the mean curvature of field is half a thousandth of an inch and the astigmatism one thousandth.

The variation of chromatic aberration with distance from the axis or, to put it in another way, the variation of spherical aberration with wavelength is insignificant. This is a characteristic of lenses of this general type not found in any other type in so far as I know. While I do not recall having seen the history of this lens form traced back to Gauss' work on telescope objectives, it seems to me the line of descent is clear. Early opticians had several solutions to offer for disposal of the fourth variable presented by a two-element telescope objective after the three primary requirements of given focal length, corrected chromatic aberration, and corrected spherical aberration has been met. Gauss proposed that the fourth condition be that spherical aberration be corrected for two colors and showed that this condition could be met with two meniscus elements—one positive and one negative—all surfaces being concave towards the image space.

In 1889, Alvin Clark, America's most accomplished telescope objective maker, was granted a patent (USP 399,499) on a photographic objective consisting of four meniscus elements and comprising substantially two Gauss telescope objectives mounted with all faces curved towards the diaphragm. This lens was manufactured by the Bausch and Lomb Optical Company for several years.

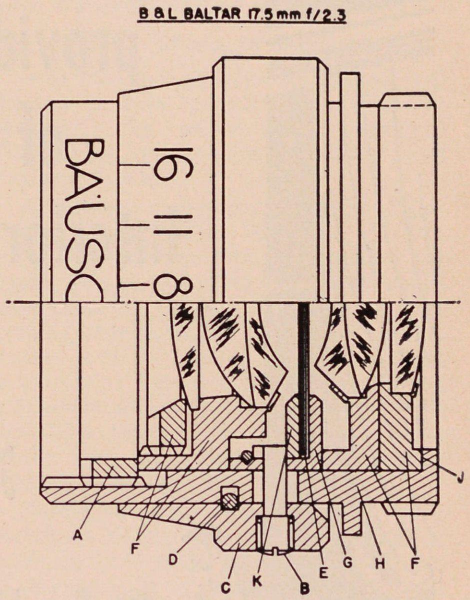


Figure 1.

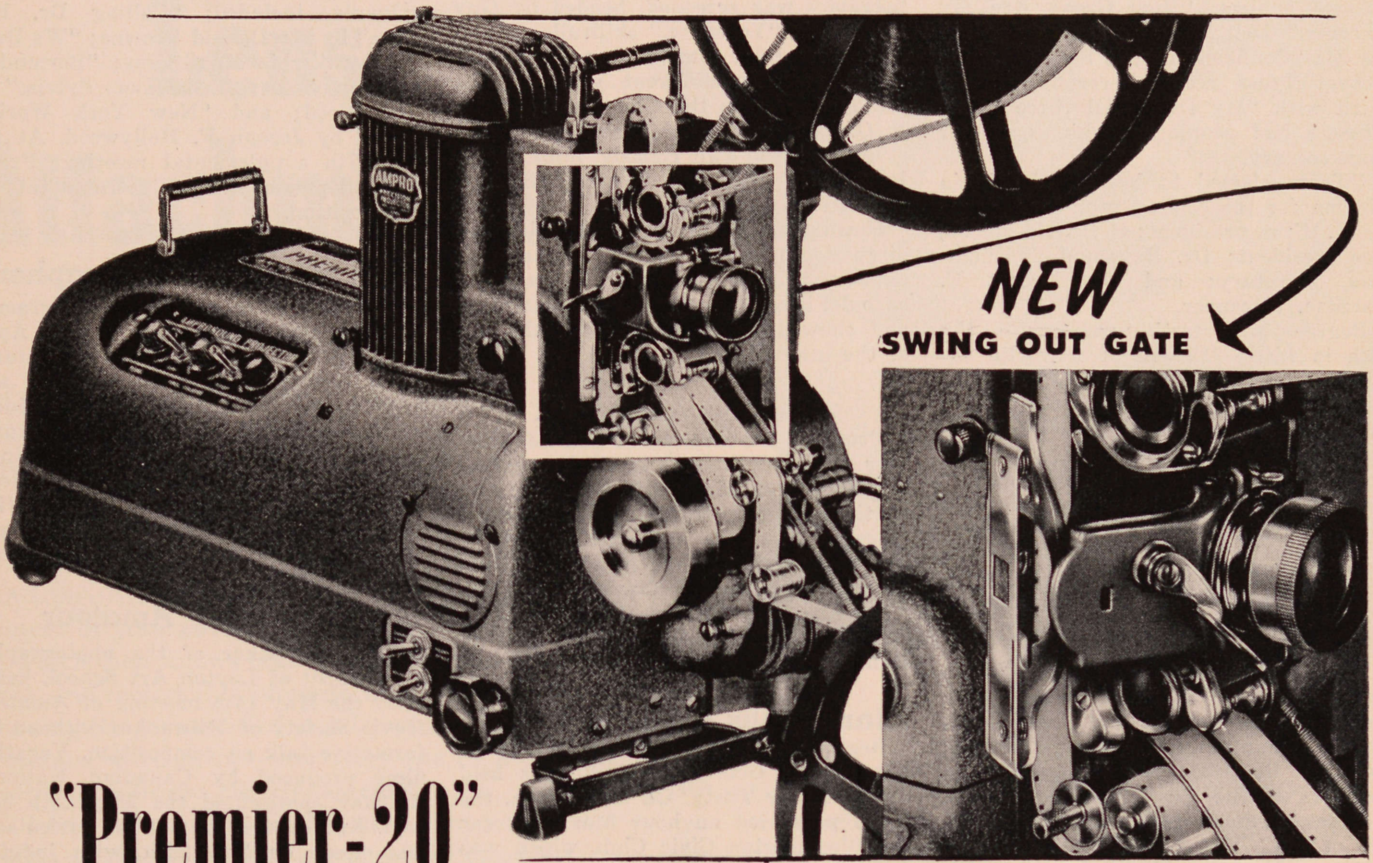
The deviations from this basic construction are large in number and exceedingly diverse in performance characteristics. They include process lenses, wide-angle lenses, and high-speed lenses. And they all approach reasonably well the original thought of Gauss, *viz.*, that spherical aberration should be equally well corrected for two colors.

The best efforts of the designers, however, are of no value unless the execution of the design in manufacture is equally carefully and competently controlled. One of the fundamental requirements in assembling a lens system is to achieve exact alignment on a common axis of all the lens elements. The commonest lens construction consists of a front member and a rear member, each mounted in threaded mounts that screw into the two ends of a lens barrel which contains the iris diaphragm. The difficulty of getting these units to screw together so that the two members are truly coaxial is formidable. It is true that many excellent lenses have been made in this way but we think there is a better way.

For these short focus lenses we have mounted each lens component in an individual cell with a smooth, cylindrical

(Continued on page 218)

Improved 16mm. sound projection



"Premier-20"

16MM. SOUND PROJECTOR

Close-up of new swing-out gate, showing gate in open position.

Enjoy the thrill of brilliant, clear pictures . . . natural, life-like sound reproduction with the new improved Ampro "Premier-20" 16mm. Sound Projector. Simplified controls, lightweight portability, ease of threading . . . all combine to make this the ideal projector for 16mm. talking pictures in the home, school, church or club. The new Swing-out Gate, shown at the right, permits easy cleaning of the aperture plate and pressure shoe . . . without ever disturbing the focus . . . Many other important features.

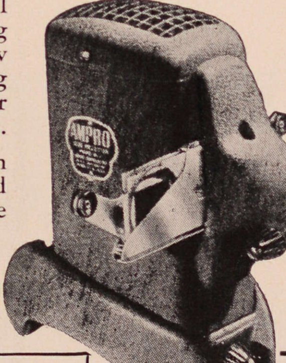
NEW RICHER TONE QUALITY—The latest 12-inch Jensen Permanent Magnet Dynamic Speaker reproduces sound faithfully, realistically . . . has adequate power for moderate size auditoriums.

STREAMLINED CARRYING CASES—Rugged . . . scratch-resistant . . . easy to clean, they offer complete protection for your Ampro projection equipment.

New Improved Ampro Projector

FOR 2" x 2" SLIDES

Many new and exclusive improvements . . . including automatic snap-action, self-centering slide changer . . . brilliant 300 watt light . . . ample heat dissipation . . . quick, positive tilting . . . and numerous other features that make for brilliant projection of black-and-white and full color slides.



Amproslide
Model 30-A

AMPRO

8mm. Silent • 16mm. Silent
16mm. Sound-on-film • Slide Projectors
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A General Precision Equipment Corporation Subsidiary

Write Today...

Mail coupon today for illustrated circulars giving full details, specifications and prices on these as well as other Ampro projectors . . .

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AMPRO CORPORATION
2835 N. Western Ave., Chicago 18, Ill.

☐ "Premier-20" 16mm. Sound-on-film Projector.
☐ Amproslide Model "30-A"—2" x 2" Projector.
☐ 8mm. Silent Projector.

NAME____________________

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AMONG THE MOVIE CLUBS

Philadelphia Cinema

Dr. Robert E. Haentze was the winner in the annual film contest of Philadelphia Cinema Club for his 8 mm. kodachrome subject, "How Green Are My Parents." Dell Valle won second place for his "Confidentially, It Stinks," while Robert Tross received certificates for third with "My Day." All three prizewinners had people as subjects, rather than scenery.

Officers elected to head Philadelphia Cinema for the coming year are: Francis M. Hirst, president; C. Harold Moock, vice president; Dr. Raymond L. Chambers, secretary; and Dr. Robert E. Haentze, treasurer.

Regular May meeting was held on the 13th in Little Theatre of Franklin Institute, and featured short nature talks by Irvin Boeshore and George Pittman. Film program comprised: "Wild Flowers," by Frank Hirst; "Maine—Vacationland"; and "Trip to the Dentist," by Arthur Salis. Special meeting was held on May 24th to exhibit "Typical Times in the Tropics," by Ralph Gray of Mexico City.

Alhambra La Casa

Program chairman presented discussion and demonstration on titling at the May 19th meeting of La Casa Movie Club of Alhambra, California; while film section of the program was presented by members of the Pasadena Movie Club. Pictures screened included: "Rose Parade of 1947," by Albert B. Topits, Sr.; "Midwest Vacation Highlights," by Milton A. Miller; and "A Short Northwest Travelogue," by Forrest LeBarron.

Los Angeles Cinema

Although the May 5th meeting of Los Angeles Cinema Club was primarily an educational session, some unusual photography was screened, headed by Guy Hazelton's "Yosemite," skillfully assembled from color film he shot at the national park in different years. "The Heavens Declare the Glory of God," by S. G. Lutz, presented a series of cloud studies; while two comedy films, "The Prize Winner," and "Father's Time" were greatly enjoyed.

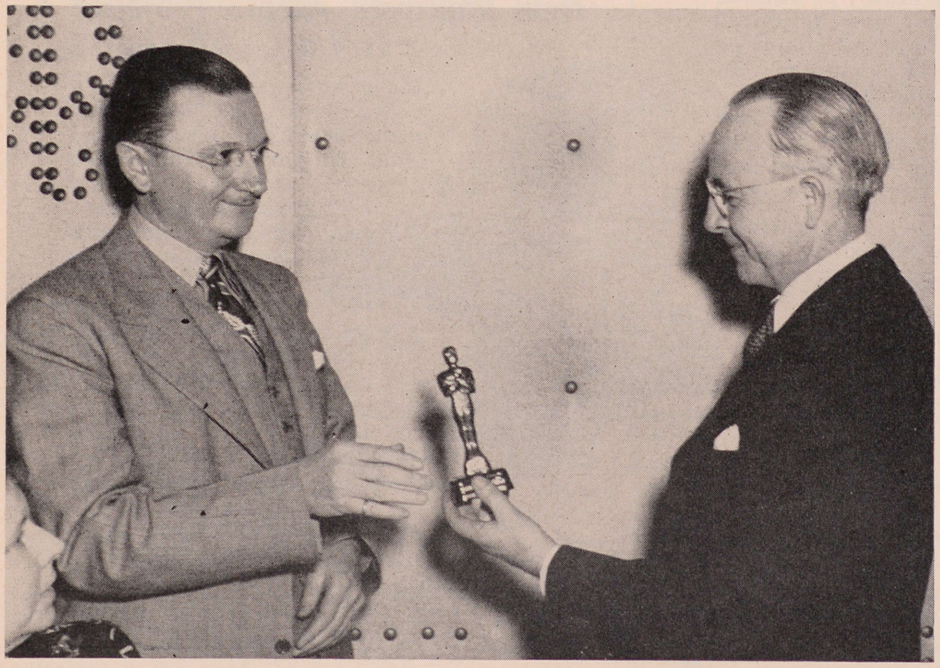
Howard T. Souther presented a learned discussion on composition and illusion of depth with slides to illustrate, and Lorenzo del Riccio displayed the Zoomar lens and showed a film illustrating the use of the instrument.

Seattle Amateur

Program for meeting of Seattle Amateur Movie Club on May 13th centered around title-making, with various types of titlers demonstrated and the actual titles for the club production made before the members. Film program included contributions by Gordon Forsythe, Austin Grant, Charles Grinnell, John Holman, Clyde Huntley and Dr. Harvey Johnson.

Minneapolis Octo Cine Guild

Regular monthly dinner meeting of Minneapolis Octo Cine Guild was held at the Hasty Tasty. On April 16th, the Guild presented an hour film show for the Bloomington Civic Club, which was enthusiastically received. Project committee is making progress on plans for production of an indoor film.



Dr. Robert E. Haentze, left, presented with trophy of Philadelphia Cinema Club by president Francis M. Hirst, for his winning entry in the club's annual movie contest. Haentze's film was "How Green Are My Parents," in 8mm. kodachrome.

New York Metropolitan

Film program for the May 15th meeting of Metropolitan Motion Picture Club of New York City, held at Hotel Pennsylvania, included: "Calling Dr. Kildare," by MacDonald Browne; "We Dude It," by Archie MacGregor; "Bermuda," by Britt Boice; "Leo Shoots Sylvia," by Bill Weed; and "New York World's Fair," by Joseph F. Hollywood. At the May 7th supplemental meeting, Frank Gunnell presented an illustrated talk on Composition.

Syracuse Cinematographers

Cinematographers Club of Syracuse held its first annual banquet on April 26th, at which time contest pictures made during 1946 were run off and judged. First prize went to President A. D. Rodgers for his 16 mm. kodachrome reel, "The Adventures of Uncle Dudley." Mr. and Mrs. Walter Kellogg took second prize for their 8 mm, "Ville de Montreal." Club moved into permanent quarters at 339 E. Onondaga street.

Milwaukee Amateur

Gerhardt Baker of the photographic department of Layton Art School, headlined the May 14th meeting of Amateur Movie Society of Milwaukee with an informative talk on composition. Vacation films produced by Canadian National Railway spotlighted the May 28th session. Entries for the annual novice contest closed on May 28th, with judging to be handled at the June 11th meeting.

Los Angeles Eight

Preview showing of Herman Hack's professional 16 mm. production, "The Frontier Preacher Reads the Bible," featured the May 13th meeting of Los Angeles 8mm. Club, held at Bell & Howell auditorium. In addition, there was a demonstration of the Zoomar lens, and film program which included Hugh Wallace's film of Mexico.

San Francisco Westwood

Excellent film program was presented at the April 25th meeting of Westwood Movie Club, San Francisco, including "Eighth Air Force Gun Camera Combat Film," courtesy of Ralph Elliott; and "An Eastern Vacation," by member N. A. Soderman.

Cincinnati Amateur

Cincinnati Amateur Movie Club has been organized by Hal Woodward and Forrest Young, with former elected as first president and Young as secretary-treasurer. Initial meetings of the club included discussions and demonstrations of cinematographic technique by Bob Richardson of American Film Products ,and George Stucker of Fox Movietone News.

Kodak Combination Lens Attachments

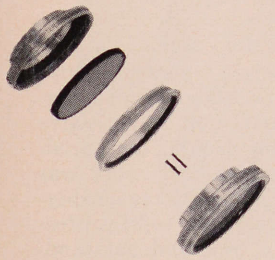
FILTERS . . . Portra Lenses . . . Pola-Screens . . . Lens Hoods—here's a system by which one investment permits the use of any or all of these picture-bettering attachments on your movie and "still" camera lenses. (Still cameras take, in addition, Telek Lenses and Pictorial and Portrait Diffusion Disks.)

An Adapter Ring fits snugly over the lens barrel . . . the attachment of your choice slips into the Adapter Ring Insert which then screws into the Adapter Ring. Easy to use? Yes, and remarkably versatile, too. Through the use of Retaining Rings instead of an Adapter Ring Insert, you can combine attachments—use *every one* of the above accessories in a single, effective assembly.

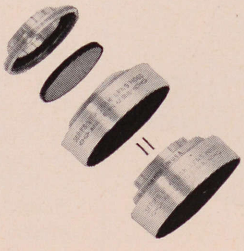
You'll find it an economical system. For, while over forty sizes of Adapter Rings are provided to assure an exact fit for each individual lens, there are only four sizes—or series—of attachments. *You can use the same attachments on all lenses in the same series-group.* And even if you own lenses in more than one series, chances are you can fit all your lenses with one inexpensive set of attachments through the use of a Kodak Step-Up Ring which lets you use attachments of one series on lenses of the next smaller size group.

Your Kodak dealer has the full story on this handy way to wider-range movie and still picture making. Better see him—and ask for copies of the free folder, *Ciné-Kodak Filters and Other Lens Attachments,* and the free booklet, *Kodak Filters and Other Lens Attachments.*

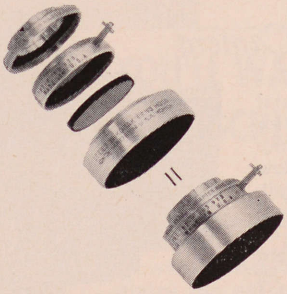
A FEW OF SCORES OF POSSIBLE COMBINATIONS



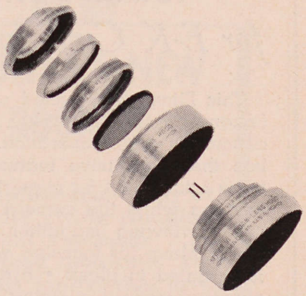
Here's the basic system—a Filter (or any other single attachment) fits snugly between Adapter Ring and Adapter Ring Insert.



For reduction of flare—the Adapter Ring, Filter Disk, and a Lens Hood. The Lens Hood doubles as the retaining element.



Adding a Pola-Screen to the combination—Adapter Ring, Pola-Screen, Filter Disk, and Lens Hood make up this unit.



Still another possibility—Adapter Ring, Portra (close-up) Lens, Retaining Ring, Filter Disk, and Lens Hood.

EASTMAN KODAK CO., ROCHESTER 4, N. Y.

Koda

Bass says:

I trade cameras and equipment

Come in or write me—tell me what you've got and what you want—we can get together.

Bass Camera Co.
179 W. MADISON ST.,
CHICAGO 2, ILL.

Bell & Howell Records Advance for 1946

Bell & Howell Company announced net sales for the year 1946 amounting to $10,387,699, in its annual report just released to stockholders. Though this figure represents an 85% increase over the last pre-war year of 1941, according to J. H. McNabb, company president, desired production schedules were not attained during the first nine months of the year because of material and labor shortages and restrictive price ceilings. Strikes in some of the company's major suppliers' plants also restricted output.

Output per factory employee in all Bell & Howell plants exceeded previous records, according to figures cited in the report. Productivity per man-hour went 15% over the 1941 level, in a year when individual man-hour output lagged throughout the country.

After application of Federal tax carryovers, Bell & Howell's net profit for the year amounted to $422,945, representing earnings of 69 cents per share on common stock outstanding, after required dividends had been paid on the preferred holdings. Regular dividends on the common stock were paid for the thirty-second consecutive year.

By the end of the year approximately 600 World War II veterans had been assimilated into the organization. Many have been given special courses of instruction on the company premises to fit them for more skilled work.

New Facilities Put Into Use

Pending determination of a final purchase price on the original Lincolnwood plant, the Chicago firm last autumn made a substantial payment on these facilities, for the purpose of reducing carrying charges. Also prior to the end of 1946 fiscal year the total of company-owned floor space was increased to half a million square feet by virtue of the completion and occupancy of another new plant, adjacent to the original Lincolnwood structure. The new building will be utilized principally for case fabrication and line production. Unusually complete employee recreational facilities were put into use during the year, including a modern fieldhouse; a flood-lighted, graded baseball diamond with bleachers; and tennis and horse-shoe courts.

Emphasis on Equipment Shows Results

By selling the Filmsound Library during 1946 to United World Films, Inc., Bell & Howell cleared the decks for unhampered design and manufacture of equipment. Three new units already have made their appearance in the market; a moderately-priced slide projector; a 16mm electric-drive magazine-load camera for motion study work; and a high-grade precision 8mm motion picture projector.

Enters Microfilm Business

During 1946, all physical assets and patents of the Microfilm Division of the Pathe Manufacturing Co. were acquired by Bell & Howell, thus enabling the company to broaden further its services to commerce and industry. Engineering, production, sales, and service units of the Bell & Howell Microfilm Division now are set up at the Lincolnwood plant; and with improved equipment and trained personnel the company is handling considerable microfilming work on a contract basis. A complete new line of microfilm recorders and viewers will be announced in 1947.

Expanded Research

Engineering Division, operating with the largest peacetime budget in its history during 1946, carried on an extensive program of research, design, and product improvement. Engineering work was completed on a new 300 watt reasonably-priced slide projector, a semi-professional film splicer, a new and outstanding 8 mm. motion picture projector, a close-up attachment for 8 and 16 mm. Filmo cameras, an 8 mm. motion picture magazine loading camera, a 16 mm. projector and an electric motor-driven camera for time and motion study work, besides a fully-automatic 35 mm. still camera. Considerable lens design work was accomplished, and advanced methods of lens designing were developed.

Only Art Reeves Can Sell The New Model

SENSITESTER

1944-1945-1946-1947 Models Will Handle Modern Fine Grain Film

WARNING . . .

Some dealers are offering war surplus machines as new models. These 1942 surplus machines will not handle modern film. They were not designed for that purpose.

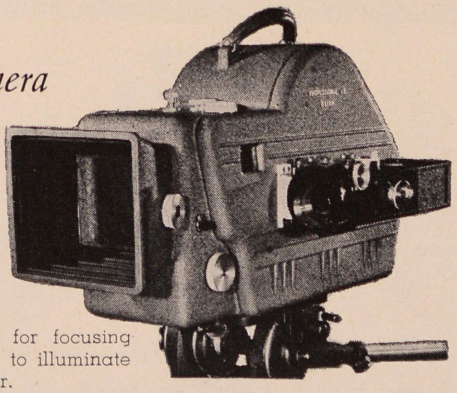
ART REEVES MOTION PICTURE EQUIPMENT

6235 Santa Monica Blvd. Hollywood 38, Calif.

"PROFESSIONAL JUNIOR"

16mm BLIMP

for E-K Cine Special Camera



This Blimp, constructed of Dow Metal (magnesium) is thoroughly insulated for absolutely silent operation. The blimp has these exclusive features: • follow focus attachment for changing lens calibrations while the camera is in operation • viewing magnifier mounted on top of blimp for focusing while camera is mounted in blimp • arrangement for opening camera viewing aperature trap for focusing from the outside of the blimp • pilot lights to illuminate lens calibrations and film footage indicator.

Blimp takes synchronous motor drive which couples to camera. It has a leather carrying handle mounted at the top. A dovetail bracket is provided to mount an erect image view-finder for following action.

Manufactured exclusively by the Makers of "Professional Junior" Tripods and Other Fine Camera Accessories.

FRANK C. ZUCKER
CAMERA EQUIPMENT CO.
1600 BROADWAY NEW YORK CITY

New 1947 RADIANT Screens make all pictures look better . . . !

Project your motion pictures and slides on a screen which makes them fairly "POP OUT" into the room with you. Thrill to sharper, clearer black-and-white pictures . . . richer, more vivid color shots. Such performance is the result of the Radiant "Hy-Flect" Screen surface . . . thousands of tiny glass beads set in the snow-white plastic screen surface—glass beads that *reflect* light, never absorb it. You get this in New 1947 Radiant Screens . . .

Plus all these Wonderful Exclusive New Features

1. Automatic Leg Opening (Pat. Pending)
2. Screen Leveller (Pat. Pending)
3. Shakeproof Safety Catch
4. Feather Touch Adjusting Handle (U. S. Patent)
5. Double-Action Auto-Lock (Pat. Pending)
6. Built-In Shock Absorbers (Pat. Pending)
7. Automatic Leg-Lock
8. Rubber-Ball Tripod Feet
9. Triangular Steel Tube Construction
10. Automatic Leg Adjustment
11. Finger Grip Carrying Handle
12. Streamlined Design and Duo-color Scheme

All pictures look better . . . when projected on the new, brilliant, instantly adjustable 1947 Radiant Screens.

RADIANT
Reg. U. S. Pat. Off.
BETTER SCREENS FOR BETTER PROJECTION

Send for FREE Screen Guide
"Secrets of Good Projection," a 32-page booklet, gives proper screen sizes, correct projection lenses, tips for improving projection and many other valuable facts. Mail coupon for your FREE copy.

The Radiant "DL" here illustrated is portable, sturdy, compact, easily set up, quickly adjustable. The Radiant line includes Wall, Ceiling and Table Models in sizes 22" x 30" to 20 feet by 20 feet and larger.

Radiant Manufacturing Corporation
1247 S. Talman Ave., Chicago 8, Ill.
Send me FREE copy of "Secrets of Good Projection"—also circular showing complete line of Radiant Portable, Wall, Ceiling and Table Screens.

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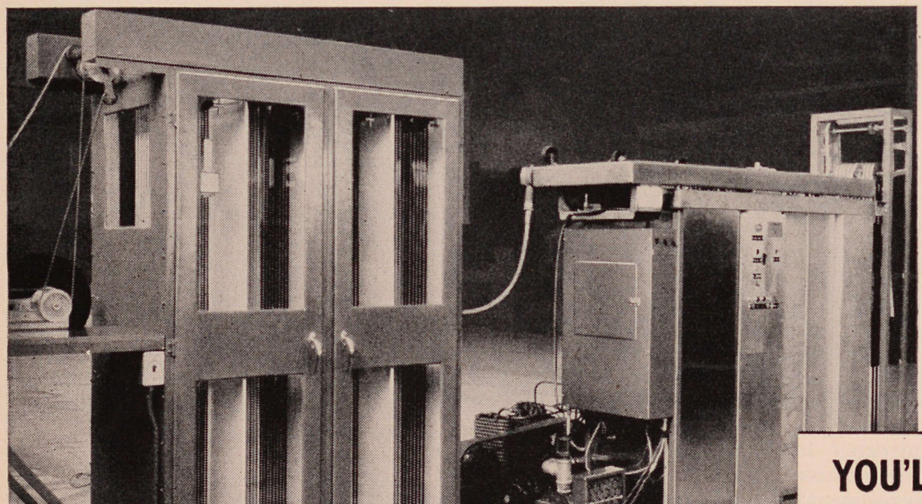
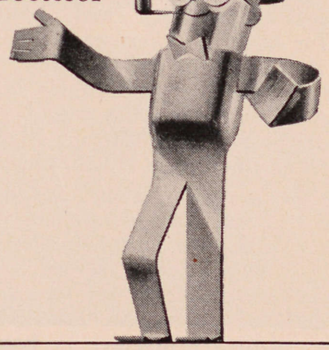
Address ________________
City ________ *Zone* ______ *State* ______





"America's Finest Processor"

YOU'LL WANT FONDA'S NEW DESCRIPTIVE BOOKLET

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Send today for your complimentary copy of the new illustrated booklet giving complete details of the Fonda Film Processor . . . America's finest developing machine. Explains the patented Fonda top-friction drive mechanism, which eliminates film slack. Fonda offers almost any speed range . . . processes any type film.

Address Fonda Division, Solar Aircraft Company, 2206 Pacific Highway, San Diego 12.

FONDA FILM PROCESSING EQUIPMENT DIVISION

SOLAR

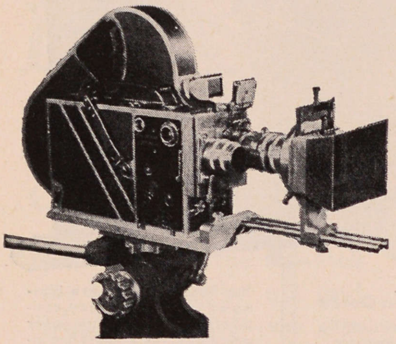
STAINLESS PRODUCTS SAN DIEGO 12, CALIF.

Professional Type Combination

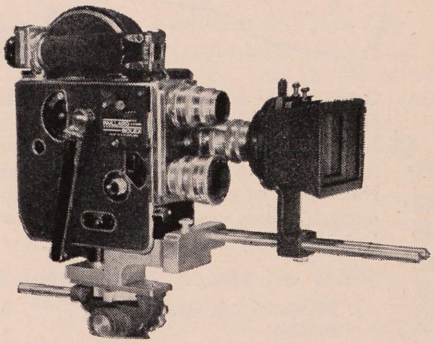
SUNSHADE and FILTER HOLDER

For E. K. Cine-Special, Bolex, Filmo and other fine 16mm cameras. It resembles the professional 35mm type Sunshade-Filter Holders and Matte Box generally used with professional 35mm cameras.

Designed for use with all popular types of 16mm cameras, the "Professional Junior" Sunshade & Filter Holder holds two 2″ square glass filters, also a 2½″ round Pola Screen with handle which can be rotated for correct polarization. By using our Sunshade & Filter Holder you will not require filters of various sizes as the 2″ square filter will cover all lenses from 15mm to 6″ telephoto.



The Sunshade-Filter Holder is supported by a double arm bracket. This attaches to a plate which you can fasten on to the base of your camera where it can remain at all times if you desire. The Sunshade-Filter Holder is demountable into 3 small units which, when not being used, fit into your camera carrying case.



Compact, simple to assemble or dismount, the entire Sunshade-Filter Holder and 2 filter holders which are supplied are precision-made of non-corroding metals. Every serious cameraman appreciates the advantages that accrue when a fine Sunshade-Filter Holder like this is used.

★

Manufactured exclusively by the makers of "Professional Junior" Tripods and other fine camera accessories.

FRANK C. ZUCKER
CAMERA EQUIPMENT CO.
1600 BROADWAY NEW YORK CITY

Order your Sunshade & Filter Holder today. And also ask for our complete catalog

Sound For 8mm. Predicted

Compact 8-millimeter motion picture projectors with sound and built-in screens for home use were predicted by Robert E. Lewis, of the Armour Research Foundation of the Illinois Institute of Technology, at the recent convention of the Society of Motion Picture Engineers at the Drake Hotel, Chicago.

"With the advent of sound for 8mm film, and the construction of 8mm projectors as a complete unit assembly including a rear-projection screen," Mr. Lewis said in a paper presented on the final SMPE session, "the installation of motion picture projectors in homes, along with television sets, is likely to parallel the installation of radio-phonographs."

Pointing out that sound on 8mm film is still in the laboratory stage, he said that several methods now the subject of study and experiment are never-the-less promising of solutions to the problems presented by the space limitations of the narrow film.

Proper Credit

In the May, 1947 issue of American Cinematographer, heading on article, "A Year With the Yearling" had a typographical error. Instead of Charles Rosher, A.C.S., as printed; correct designation, naturally, should have been Charles Rosher, A.S.C.

Kodak's Capstaff Honored

John G. Capstaff, photographic pioneer and head of Kodak Research Laboratories' photographic department, has been awarded the 1946 Progress Medal of the Royal Photographic Society of Great Britain. The annual award by the Society was presented to Capstaff unanimously for "important contributions" he has made "to the development of photography."

Capstaff has been active in photographic research for more than 30 years, and as early as 1914 conceived the idea of applying the photographic "reversal process" to provide economical motion pictures in black-and-white and color for amateurs. His inventions and improvements on reversal methods aided greatly in establishing and popularizing 8 and 16 mm. motion pictures for amateurs.

Pioneering in color photography, Capstaff is responsible for many major developments in that field, in which he is internationally known as an outstanding authority.

Westrex's Gregg on Tour

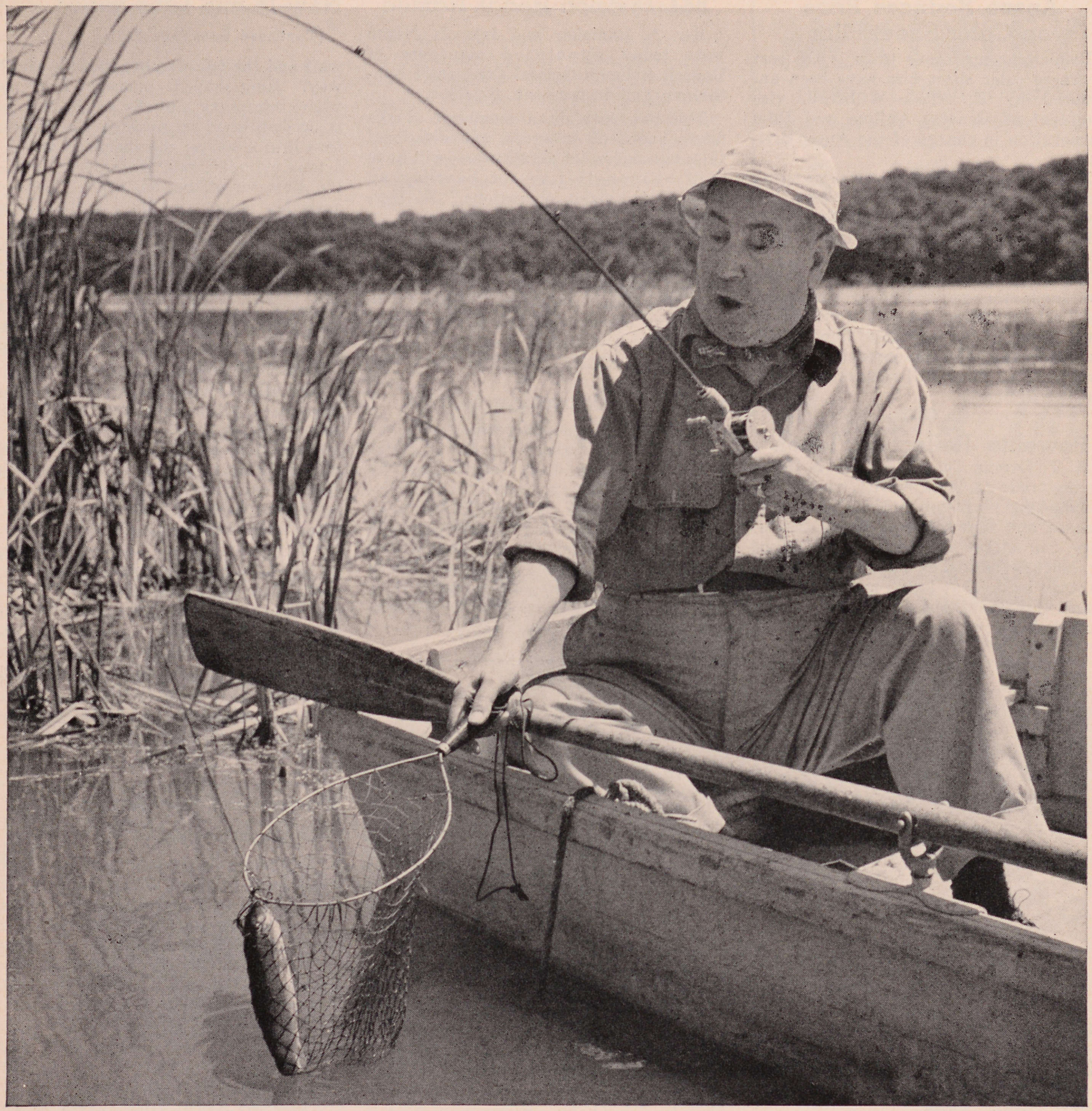
Eugene S. Gregg, vice president of Westrex Corporation, foreign motion picture equipment and service subsidiary of Western Electric Company, left New York last month for London on first leg of an around the world business trip.

Herrmann Recalls Original Byrd South Pole Films

John Herrmann, A.S.C., who photographed motion pictures of the Admiral Byrd expedition to the Antarctic in 1933-35—which were subsequently released by Paramount as a feature under title of "Little America"—was the subject of nostalgic reminiscences in a two-page spread in the magazine section of the New Orleans *Times-Picayune* a few months ago when Byrd was in the Antarctic exploring the South Pole area. Herrmann, former bureau chief at New Orleans for Paramount newsreel, is currently free-lancing in that city.

A S A Exposure Indexes Pamphlet Available

Comprehensive explanation of the practical use of the new A S A Exposure Indexes has been compiled in pamphlet form by Eastman Kodak under title of "Exposure Indexes and How to Use Them." It described the origin of the exposure index and the scale of numbers used, and compares that scale with the former Weston and General Electric meter settings. Free copies of the pamphlet may be obtained from Sales Service Division, Eastman Kodak Company, Rochester 4, N. Y.



You get it with Hypan—

YOU catch that fresh sparkle of the outdoors.

It's easier, with Ansco Hypan Film. For Hypan's bright-contrast emulsion puts a glorious brilliance in all your movie shots.

You'll catch vibrant, vivid life in your movies. So real. So lifelike. Natural, brighter pictures are the rule when you use Hypan Film.

You'll catch sharp, clear screen images. The kind you see on your local theater screen. Again, easy with Hypan. For you can count on Hypan's panchromatic sensitivity to bring you richer tone values.

And you'll catch compliments, too!

You just can't help but be proud when friends start praising the movies you'll make on Ansco Hypan Film. **Ansco, Binghamton, New York.**

ASK FOR

Ansco

8 and 16 mm

HYPAN FILM

Ansco Reduces Price on Color Sheet Film

Reductions up to one third is the cost of Ansco color sheet film have been announced by E. Allan Williford, vice president of General Aniline and Film Corporation in charge of the Ansco division.

Price changes affecting sizes ranging from two-and-one-quarter by three-and-one-quarter, through to eight by 10—in both daylight and tungsten types—took effect March 1st.

Increased production of sheet color film made the general price reductions possible, according to Williford. However, price of Ansco color film in roll sizes including 35 mm. cartridges, movie film, and roll films will remain the same for the present.

Powelite Reflector Floods

H. T. Lorenz Co. of Chicago is introducing trade-named Powelite, comprising a mounting plate for either 8 or 16 mm. camera and four reflector floods. Accessory can either be mounted on tripod or held in hand for shooting, big advantage being that lights moves on same plane with the camera to provide necessary lighting of a subject or scene.

B&L Division Heads Named

Ben A. Ramaker and Ivan L. Nixon were today appointed managers of Bausch & Lomb Optical Company's ophthalmic and instrument divisions.

The two men, both members of the firm's board of directors, and divisional sales managers for many years, will have "full responsibility for handling all phases of division operations," M. Herbert Eisenhart, president, announced.

Raymond H. Andersen was named to succeed Ramaker as head of the company's ophthalmic sales and Lysle B. McKinley was appointed successor to Nixon as manager of the firm's instrument sales division.

New Kodaguide Ready

A simple, new exposure guide for the amateur movie maker—the Movie Kodaguide—has just been announced by Kodak. Covering practically all movie-making situations, it provides an easy method of calculating correct camera settings for exposure of cine-Kodak black-and-white films and of Kodachrome film outdoors and indoors. It is now available through Kodak dealers, retailing for 20 cents.

New 16 mm Lens Series

(Continued from Page 210)

wall and the iris diaphragm in a similar way. Ring-shaped spacers are used where necessary and the whole assembly is accomplished by pushing the components into a barrel the inside of which is a true cylinder, very accurately fitted to the diameter of the lens cells. The whole assembly is held in place with a single retaining ring (*A* in Fig. 1.). This is the manner in which we have mounted microscope objectives with the utmost satisfaction for many years and our experience convinces us that we can maintain coaxial alignment by this method to a higher degree than can be accomplished with the older method.

The diaphragm actuating pin *B* is screwed in place after the assembly has been effected—a set-screw, not shown in the diagram, is installed to lock the diaphragm ring in place, and the covering ring *C*, carrying the stop opening scale, is slipped over the outside and held in place by the spring ring *D*.

To disassemble for cleaning, the ring *C* can be pushed off the mount, a set-screw that locks the diaphragm ring in place is removed, retaining ring *A* is removed, and the whole assembly can then be pushed out from the back.

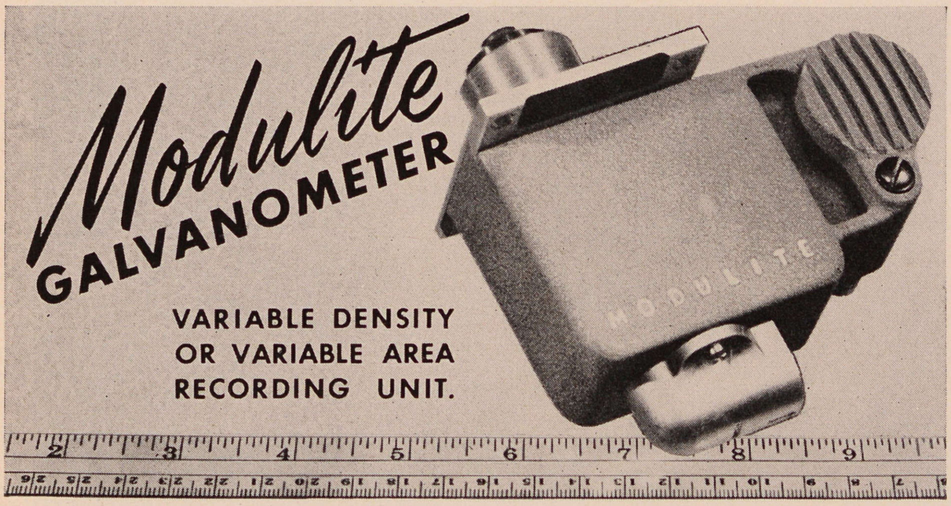
Finally, in order to reduce to a minimum the stray light in the image plane, all surfaces are coated with a hard, durable coating of magnesium fluoride.

Magnetic Tape Recording

(Continued from Page 199)

J. S. Boyers, chief engineer, of Magnecord, Inc., Chicago. They described the advantages and operations of the Magnecord, which uses a wire on which the magnetized sound is recorded and reproduced. H. A. Howell of Indiana Steel Products Company, Chicago, presented a paper, "Magnetic Sound Recording on Coated Paper Tape." He detailed the use of Hyflux coating for paper tape, pointing out the greater ease in handling, editing and repairing.

From the above brief survey of most pertinent information disclosed on the future prospects of practicability of magnetic recording for various phases of film sound, it can be readily realized that another valuable and economical tool will be made available—especially for the amateur enthusiast and those professional producers far removed from regular production centers with access to regulation sound equipment—within a few short years. For those who might be interested in studying the complete papers described, copies of the SMPE Journal, January 1947 issue, may be ordered from Society of Motion Picture Engineers, Hotel Pennsylvania, New York 1, N. Y. Many public libraries in the larger cities of the United States have files of the SMPE Journal which are accessible to those interested in referring to certain issues from time to time.



- ★ Linear response makes processing easier especially on density recordings.
- ★ Flat frequency response.
- ★ Requires only 300 milliwatts for full modulation.

  Can be biased for noise reduction.
- ★ Compact and light weight.
- ★ Mounts in any position. V bed and locking gib permit track position adjustment.
- ★ True square edge of Mounting Plate to check azimuth.
- ★ Prefocused exciter lamps. Can be changed in a few seconds. No adjustments required.
- ★ Fine focus adjustment with one-sixteenth-inch range is built in.
- ★ Rugged vibrator unit. Will withstand overloads without harm. No strings to break.
- ★ May be used for 16 m/m or 35 m/m tracks.
- ★ Image .070 wide x .0003 thick.
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Photographing in Sweden

(Continued from Page 203)

been very cold all the time I have been here.

During my visit I have seen all the currently-released Swedish films. They are good for the Swedish market; but, if they ever plan to make pictures in English, they will need American or British directors and cutters to teach them the timing our audiences expect in pictures two hours long. Yet, a good director with extensive Hollywood experience, who brings along his own film editor, can produce here. There are enough people well-versed in all phases of acting and production to do a good job. Actors are available who speak English, and I don't mean American. This is a country rich in native color and colorful subject matter. My little pictures will prove this. I flew my first batch of negative to Hollywood and ran color prints here that were flown back. Sweden is as anxious for good color as Hollywood is. They have had many excellent Russian Agfacolor pictures here. And it is real competition for American companies. Agfacolor is a beautiful color process, which allows for delicate pastel shades.

Making movies can be fun here; despite all the waiting and watching for weather and other delays (Swedes are good company and decidedly friendly) . . . but, cigarettes cost 60 cents!

Heppberger Promoted

C. E. Heppberger has been promoted by National Carbon Company to join the company's Technical Specialists' Group. Attached to the Chicago office previously, he will maintain headquarters there in his new post to handle special service on lighting carbon applications in the midwest territory. Other technical specialists for National Carbon are: Charles W. Handley, west; P. D. Ries, east, and W. C. Kunzmann, general national activities. E. R. Geib directs the group from Cleveland headquarters.

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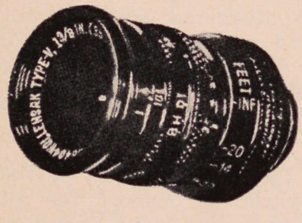

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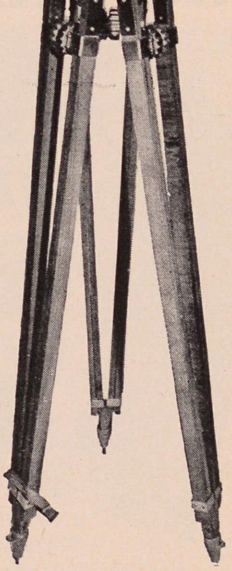

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Karl Struss, A. S. C. — 28 Years a Cinematographer

Karl Struss, A.S.C., cuts a cake on the set of the Seymour Nebenzal production, "Atlantis," in celebration of his 28 years as a Director of Photography in Hollywood. Surrounding Struss are members of the cast and crew of the production, including producer Nebenzal, Jean Aumont, and Dennis O'Keefe.

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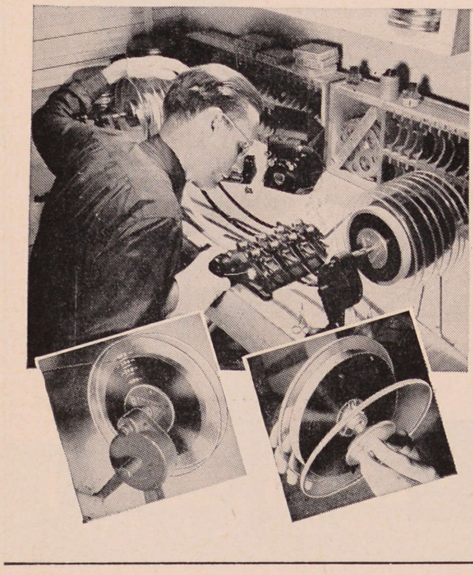

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Uniform Vacation Period For B&H Chicago Plants

In a further effort to step up its output of movie cameras and projectors by maintaining complete production facilities over the longest possible period, Bell & Howell Company will initiate a new vacation policy this year. All of the Company's Chicago plants and offices will be closed from June 30 to July 13, inclusive, but branches in New York, Washington, and Hollywood will not be affected, it is explained.

The two-week shutdown results from an intensive study of the relationship between staggered departmental vacations and production figures. Company officials predict that the new plan will be justified thoroughly by the resulting high level in orders filled.

De Vry Expands Production

Overwhelming demand for all types of De Vry motion picture equipment has resulted in company doubling plant facilities and assembly capacity at its plant in Chicago.

SMPE Fall Convention

Annual fall convention of the Society of Motion Picture Engineers will be held at the Pennsylvania hotel, New York City, October 20 to 24th, 1947. Technical papers and demonstrations will be focused on new developments and equipment in the theatre engineering field.

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Aces of the Camera

(Continued from Page 206)

Lloyd re-joined the First National special effects department, mainly specializing on optical printing. After two years he was a top expert in the field, and soon accepted contract with RKO Studios to organize and establish the new special effects department there.

After five years as head of the special effects and optical printing at RKO, Lloyd accepted offer of George Humphries & Co. of London to head a similar department there for services to British producers. He felt it was a great opportunity, as the British film business had started to progress in a big way, and the free lance field there would allow for individual initiative and inventiveness, in addition to the establishment of a profitable business.

At Humphries, the first thing necessary was to build an optical printer and contact all the producers for trick work, montages, process background shots and the like. He managed to buy two Bell & Howell cameras from Paramount in Hollywood, and two Mitchells. The four cameras were put in perfect condition to insure rocklike steadiness. When the plant was in operation for service to British producers, Lloyd launched a campaign to solicit business of process backgrounds in England and the continent from Hollywood studios. With an intimate knowledge of the latters' requirements, this phase developed into a profitable business; and over a period of time the assignments covered virtually all Hollywood and New York studios. Some of the pictures for which Knechtel shot English and European backgrounds included: "David Copperfield," "Yank at Oxford," "Ninotska," "Bluebeard's Eighth Wife," "Balalaika," "Raffles," "Of Human Bondage," "Top Hat," "Gay Divorcee," "Algiers," "Over the River," "Rebecca," "Paris in the Spring," and "Midnight."

Photographing such scenes abroad presents many problems, Knechtel discloses. There is not the flexibility of securing the scenes as exists in the United States. One major problem is customs troubles when passing from one country to another. But Lloyd found the best method of travel—even in those days—was via air, taking camera and equipment along. He had established special contacts through a travel agency which expedited clearances through customs; whereby receipt of an order from a Hollywood studio one day would allow him to start shooting the following day in Paris, Switzerland, or some other continental location.

Naturally, many amusing experiences were encountered. On the Paramount picture, "Midnight," the locale was Paris. Script called for Claudette Colbert to arrive on the Blue Train from the south of France. Lloyd finally secured permission to shoot the Gare de Lyon railroad station—have a train arrive with the required extras aboard. It was a night shot, with script calling for rain—but it was not raining when the scenes were made. After a great deal of persuasive talking, it was arranged to wet down the cars and the platform with a sprinkler wagon. Process backgrounds were made for an eventual walking treadmill shot alongside the train to be completed at the Hollywood studio.

But then the fun began for Lloyd and Paramount. There had been no rain in Paris for many days, while the numerous required background shots for taxicab process scenes showing wet street reflections along the Champs Elysees seemed stymied by the continual fair weather. Lloyd contacted the City of Paris to arrange for a water sprinkler to wet down the streets—but no luck. "A car might skid on your watered street; someone might be injured or killed; and the City of Paris could be sued." Result was a long wait until it actually rained so that the shots could be made—but Lloyd and his crew out-sat the elements!

For the Walter Wanger production of "Algiers," considerable difficulty was encountered in securing the necessary official permission to photograph the required scenes. Since the latter were urgently needed, it was necessary to use other methods. So Lloyd employed newsreel cameraman Paul Saffer to assist with his governmental photographic permit. And on the day that all scenes had been completed, the officials graciously presented Lloyd with the necessary credentials! But that night he was on his way back to London with everything "in the bag." For this picture, clothes were sent over from Hollywood to be worn by a double for Hedy La Marr, and Lloyd was supplied with full particulars as to height, weight, etc., of both Miss LaMarr and Charles Boyer. Double used for Miss La Marr was the hat check girl at the Aletti hotel, while Boyer's double for the scenes was the head waiter. By a coincidence, he returned to Algiers several years later as an officer in the Signal Corps during the war, and saw both of his actors again—but the hat check girl had married with three children to take care of, and the head waiter also had added to his family.

When the Queen Mary made its first trip across to the United States, Warners wanted rail shots from that boat as it pulled out from the Southampton harbor for process shots. Lloyd, in this instance, practically had to appeal to the King for permission, but the shots were made successfully on the run to Cherbourg.

Knechtel returned from England at the end of 1939, convinced that the United States would soon be drawn into the war. Before he was commissioned a first lieutenant in the Signal Corps in April, 1942, he was associated with Metro-Goldwyn-Mayer on second unit photography including "The Mortal Storm," "Boom Town," "Men of Boys Town," and underwater photography in Florida for "Son of Tarzan."

As an officer in the Signal Corps, he had the express assignment of installing the special photographic effects department at Astoria, and one week after receiving his commission, was back in Hollywood purchasing $250,000 worth of equipment for the new enterprise. This equipment was purchased from suppliers, studios, and other sources around the country. Fortunately, the department was completely equipped for operation, and then Lt. Knechtel hopped all over the country making training films, getting promotion to captaincy within a year.

In July, 1943, he headed a photographic unit of three officers and 20 enlisted men which spent three months in Africa before heading for Italy assigned to the Fifth Army headquarters. Later Captain Knechtel was assigned as motion picture photographer to General Mark Clark, and was with the first American troops that entered Vienna after the war. He comments that it was sad to see such a beautiful city devastated by the horrors of war—in sharp contrast to the gay atmosphere of his last visit in 1937. But the valiant people of Vienna had already started to rebuild the ruined.

Capt. Knechtel photographed the German surrender in Italy, but his most exciting experience during the period was the sudden eruption of Mt. Vesuvius as the photographic plane was flying alongside the volcano's crater at a low altitude. The hot lava and rocks bombarded the plane; broke the glass in the pilot's compartment; knocked dents in the ship; and it was fortunate the pilot landed the completely ruined plane.

Lloyd's final assignment in Europe was photographing the first war criminal trial, that of German general Lt. General Dostler, who was convicted and later shot in Rome. He returned to the United States in January 1946 for release from army duties, but two months later signed up for duties—together with several other A.S.C. members—on the atomic bomb tests last year at Bikini. Now back actively working in production, he keeps busy handling motion picture photography and special effects for the major studios, and color shorts for producer Jerry Fairbanks.

Paris Pictorial Photography Salon Oct. 25-Nov. 9

Twenty-fifth annual salon of pictorial photography, under auspices of Societe Francaise de Photographie et de Cinematographie will be held in Paris from October 25th to November 9th, 1947. Information can be secured from the secretary of the society, 51, rue de Clichy, Paris, 9.

Photographers' Association Sets Chicago Convention

Photographers' Association of America will hold its 56th annual convention at the Hotel Stevens, Chicago, August 25-29. Featured will be the General Picture Exhibit consisting of portrait and commercial photographs, and a special direct color transparency exhibit.

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Bergman Wins Humane Society Film Contest

Walter Bergman won first prize of $150 in the recent motion picture contest of the American Humane Society, drawing the nod for the second consecutive year. His entry, "Squeaky's Kittens," was a 16 mm. kodachrome movie play. Second prize of $100 this year went to John C. Sherard of Kansas City for his "Tar Baby," in 16 mm. monochrome; while Charles Benjamin of Brooklyn won third prize of $50 for "Safari," a 16 mm. kodachrome zoological reel.

Leo J. Heffernan, director of Metropolitan Motion Picture Club of New York, and widely known as one of the outstanding amateur movie makers of the country, was chairman of the judges' committee, which included: Dr. Irene Cypher, of New York University Department of Education; Louise Branch of United Specialists, Inc.; William Bridges, editor and curator of publications of New York Zoological Society; and James M. Ross, editor of National Humane Revue.

Comments by Heffernan

"For several years, I have been acting as judge with four others who have been asked to name the winners in the motion picture contest of the American Humane Society. The reason I have been asked to sit in on the judging is that I have made motion pictures on an amateur basis over a period of years and the directors of the Society thought that someone should represent the amateurs on the board of judges.

"This has been fine for me, and I have enjoyed the work but, at the same time, I have felt like getting out and prodding the amateurs who submitted films in the contest—not only those who submitted films, but also those who have not taken advantage of the opportunity to win one of the substantial prizes which have been offered.

"The contest has been successful in arousing interest among the amateurs, it is true, but what the moviemakers have been slow to see is that there is no reason in the world why they cannot concentrate their movie activity on a film which is made with this contest in mind. What better subject could one have for a so-called home movie than the kind treatment of animals?

"Almost everyone has a pet right in his home who could be called upon to enact the leading part in a story which would be highlighted by the principles of training and loving care of pets which are advocated by the Humane Society—and the film need not be dull because it is on such a high plane. In fact, the Society is seeking films which are entertaining and which are of interest to audiences generally, not teaching films especially. All a moviemaker needs to do is plan his film in such a way that it will come within the scope of the aims of the Society.

"One movie amateur has done exactly that and with startling results. Walter Bergman, ardent movie amateur of Mount Vernon, N. Y., has submitted two entries to the board of judges, one this year, and one last year—and both entries have won first prize. Last year the first prize award was $100—and this year the first prize was upped another $50 to make a grand prize of $150, so it can be seen that making movies with an eye cocked in the direction of the Humane Society Contest might very well be a way of paying for many rolls of that expensive movie film.

"Contrasting Mr. Bergman's system with that of the other contestants, most of whom submitted their films simply because there were some shots of animals in them, shows the difference between the astute and the hit-or-miss filmer. This does not mean that the judges might not go overboard about a film made by a casual filmer. We want everyone to get into this contest. But it does seem to me that filmers should roll up their sleeves this summer and plan their movies, or at least *one* movie, with this contest in mind. You will be so much more likely to win, if your movie conforms in some measure to what the Humane Society is looking for in amateur movies."

Sound Recording Systems for UN Sessions

United Nations activities will be filmed for lasting records, with the organization securing a single channel newsreel sound recording system from Electrical Research Products division of Western Electric.

According to plans mapped, meetings of the UN Security Council and other prominent groups will be covered for the archives.

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Eastman Sales Soar

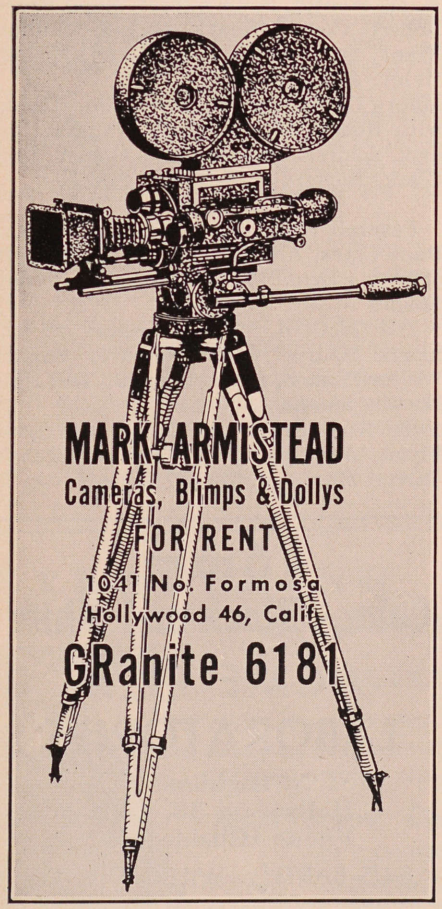
First quarter 1947 consolidated sales of Eastman Kodak Company totalled $71,500,000, as against $53,000,000 for the same period of 1946. These figures were disclosed by President Thomas J. Hargrave at annual stockholders' meeting last month. He pointed out that, the increase was attained despite fact that the company has held its average price increase to less than 15% in contrast to 1939-40 price average for products; although raw materials and labor costs had risen 60 and 75% respectively.

Summarizing principal company activities, President Hargrave pointed out that Koday Park is operating at capacity on sensitized materials, and in the first quarter of the year, output was approximately 15% greater than at the end of 1946.

English Cinematographer Visits Hollywood

Jeff Unsworth, Director of Photography for Independent Producers, Ltd., with headquarters at Pinewood Studios, England, stopped off in Hollywood for a few days early in May while enroute by air to London from the Fiji Islands. He visited the A.S.C. clubhouse for several hours as guest of Phil Tannura.

Unsworth had spent a month in the Fiji Islands scouting locations and shooting about 3,000 feet of monopack color for the proposed Technicolor production of "Blue Lagoon," which Independent Producers plans to make in the islands this fall.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Current Assignments of A. S. C. Members

As this issue of AMERICAN CINEMATOGRAPHER goes to press, members of the A.S.C. were engaged as Directors of Photography in the Hollywood studios as follows:

Columbia

Burnett Guffey, "Assigned to Treasury," with Dick Powell, Signe Hasso, Maylia, Ludwig Donath, Vladimir Sokoloff.

William Snyder, "The Man From Colorado," (Technicolor) with Glenn Ford, William Holden, Ellen Drew, Edgar Buchanan, Ray Collins.

Fred Jackman, Jr., "The Prince of Thieves," (Cinecolor) with Jon Hall, Patricia Morison, Adele Jurgens, Alan Mowbray.

Vincent Farrar, "It Had to Be You," with Ginger Rogers, Cornel Wilde, Ron Randell, Percy Waram, Spring Byington.

Charles Lawton, Jr., "Double Take," with Franchot Tone, Janet Blair, Janis Carter, Lynn Merrick.

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Henry Freulich, "The Lone Wolf in London," with Gerald Mohr, Nancy Saunders.

Eagle-Lion

Jack Greenhalgh, "Adventures of Casanova," with Arturo de Cordova, Noreen Nash, Lucille Bremer, Turhan Bey, John Sutton, George Tobias, Lloyd Corrigan, Fritz Leiber.

Jackson Rose, "A Texas Story," with James Craig, Johnnie Johnston, Lynn Bari, Una Merkel, Sara Allgood, Harry Davenport, Wallace Ford.

Metro-Goldwyn-Mayer

Charles Schoenbaum, "Good News," (Technicolor) with June Allyson, Peter Lawford, Joan McCracken, Pat Marshall, Ray MacDonald, Mel Torme.

Harry Stradling, "The Pirate," (Technicolor) with Judy Garland, Gene Kelly, Walter Slezak, Gladys Cooper, Jerry Bergen, Ellen Ross.

Ray June, "Alias a Gentleman," with Wallace Beery, Tom Drake, Dorothy Patrick, Gladys George, Leon Ames, Warner Anderson.

Robert Planck, "Cass Timberlane," with Spencer Tracy, Lana Turner, Mary Astor, Cameron Mitchell, Albert Dekker, Margaret Lindsay.

Robert Surtees, "The Kissing Bandit," (Technicolor) with Frank Sinatra, Kathryn Grayson, J. Carroll Naish, Sono Osato, Mildred Natwick, Edna Skinner, Billy Gilbert, Mikhail Rasumny.

Paramount

Ray Rennahan, "Whispering Smith," (Technicolor) with Alan Ladd, Robert Preston, Brenda Marshall, Donald Crisp, William Demarest, Fay Holden, Frank Faylen, John Eldredge, J. Farrell MacDonald.

Daniel Fapp, "Dream Girl," with Betty Hutton, Macdonald Carey, Virginia Field, Patric Knowles, John Abbott, Walter Abel, Peggy Wood.

Republic

John Alton, "Driftwood," with Walter Brennan, Ruth Warrick, Dean Jagger, Charlotte Greenwood, Natalie Wood, Jerome Cowan, H. B. Warner.

Tony Gaudio, "The Red Pony," (Feldman-Milestone Group Prod.) (Technicolor) with Myrna Loy, Robert Mitchum, Louis Calhern.

RKO

George Barnes, "Mourning Becomes Electra," with Rosalind Russell, Michael Redgrave, Raymond Massey, Katina Paxinou, Henry Hull, Nancy Coleman.

Lucien Ballard, "Memory of Love," with Dana Andrews, Merle Oberon, Ethel Barrymore, Hoagy Carmichael, Artur Rubinstein.

Gregg Toland, "The Bishop's Wife," (Samuel Goldwyn Prod.) with Cary Grant, Loretta Young, David Niven, Monte Wooley, Elsa Lanchester.

Selznick

Joe August, "Portrait of Jennie," with Jennifer Jones, Joseph Cotten, Cecil Kellaway, David Wayne, Albert Sharp.

Twentieth Century-Fox

Norbert Brodine, "Kiss of Death," with Victor Mature, Brian Donlevy, Patricia Morison, Coleen Gray, Wendell Phillips, Anthony Ross, Henry Brandon.

Joseph La Shelle, "The Foxes of Harrow," with Rex Harrison, Maureen O'Hara, Richard Haydn, Gene Lockhart, Vanessa Brown, Victor McLaglen, Hugo Hass, Dennis Hoey, Charles Irwin.

Harry Jackson, "Off to Buffalo," (Technicolor) with Nancy Guild, Dan Dailey, Charley Winninger, Fay Bainter, Charles Ruggles, Charles Russell, Jane Nigh, Sig Ruman.

Benjamin Kline, "Flamingo," (Sol Wurtzel Prod.) with Don Castle, Virginia Christine, Richard Gaines.

United Artists

Lucien Andriot, "Intrigue," (Star Films) with George Raft, June Havoc, Helena Carter, Dan Seymour, Marvin Miller, Tom Tully, Phillip Ahn.

Russell Harlan, "They Passed This Way," (Enterprise) with Joel McCrea, Frances Dee, Charles Bickford, Joseph Calleia.

James Wong Howe, "The Time of Your Life," (William Cagney Prod.) with James Cagney, William Bendix, Jean Cagney, Wayne Morris, James Barton, Gale Page.

Universal-International

Hal Mohr, "The Lost Moment," (Walter Wanger Prod.) with Robert Cummings, Susan Hayward, Agnes Moorehead, Joan Lorring, Frank Puglia, John Archer, Eduardo Ciannelli, Minerva Urecal, William Edmunds.

Frank Planer, "The Exile," (Fairbanks Co. Prod.) with Douglas Fairbanks, Jr., Maria Montez, Paule Croset, Nigel Bruce, Robert Coote, Henry Daniel, William Frenk, Otto Waldis, Alla Dunn, Michale Haley, Janna DeLoss.

Maury Gertsman, "Ride the Pink Horse," with Robert Montgomery, Wan-da Hendrix, Andrea King, Thomas Gomez, Fred Clark, Richard Gaines, Art Smith.

Warners

Peverell Marley, "Whiplash," with Dane Clark, Alexis Smith, Zachary Scott, Jeffrey Lynn, S. Z. Sakall, Freddie Steele.

Ted McCord, "The Treasure of the Sierra Madre," with Humphrey Bogart, Walter Huston, Bruce Bennett, Tim Holt, Barton MacLane.

Sid Hickox, "Silver River," with Errol Flynn, Ann Sheridan, Thomas Mitchell, Barton MacLane, Tom D'Andrea.

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Cinema Workshop

(Continued from Page 208)

of varying subjects. It is suggested that practical tests be made before actual shooting of these scenes is undertaken.

Matte Shots

A great many of our present-day special effects are achieved through the use of masks or *mattes* which hold back part of a scene so that another image may be exposed on the space "reserved." In this way, clouds can be added to a cloudless sky, a simple set can be made to look like a mansion, a scene photographed in a neighborhood grove of trees can be made to appear as if it were taking place in Yellowstone Park or Sequoia.

The mechanical device by which these effects are produced is a rigid rectangular frame or *matte box* which is mounted just in front of the lens itself. The *matte box* is made in frame proportions and is usually coupled with a sunshade. Into its grooves can be slipped *mattes* of various shapes cut of cardboard or blackened thin sheet metal. The shapes of the mattes depend upon the composition of the subject, but they are usually made in pairs—the *A* matte exactly fitting the cut contour of the *B* matte.

The technique of exposing matte shots requires a good deal of care and precision. Let us say, for example, that you want to add clouds to a scene having a cloudless sky. You would first set up your main or *foreground* scene, securely anchoring your camera so that no movement is possible. You would then cut your *A* matte exactly to fit the contours of the horizon of the scene. You can check the alignment quite accurately if you are using a camera with a rack-over base or a direct through-the-lens viewfinder. With the *A* mattee in place, you photograph the scene—making sure that no action takes place above the horizon line.

You then wind back your film in the camera or in a darkroom, and set up your camera on a sky full of clouds. Placing the B matte at the bottom of your frame, you photograph the clouds.

If you have been precise in your operations, the foreground scene will appear with a cloudy sky that has been accurately matched at the horizon-line. If you are able to shoot at an aperture of f.5.6 or greater, the contours of the mattes will be out of focus just enough to feather-edge together smoothly.

It is necessary to expose both scenes very carefully, so that their respective tones and densities will match smoothly. If desired, each scene may be shot on a separate piece of film and the two printed together by a laboratory adequately equipped to balance such effects.

Simulated Follow Shots

A *follow* shot, as we have noted in an earlier chapter, is a scene in which the camera, mounted on a mobile base, actually *follows* the subect about the set. A routine *follow* set-up is that which shows people riding down the street in a car, while the camera (apparently tagging along for the ride) records the action and dialogue.

In professional filming, this type of shot is made by photographing a stationary vehicle in front of a translucent screen onto which, by means of rear projection, a moving background is flashed. This is a highly complicated and precise process, but there is a far easier and quite satisfactory way of achieving the effect, provided you don't have to show the action against a specific background.

First, the vehicle is placed and the camera is set at a low angle, so that the only background that shows is a cloudless sky. The motor is kept running in order to provide realistic vibration. In addition, one or two assistants out of camera range shake the vehicle to simulate normal road movement. Another assistant, strategically placed off-scene with a large board or the branch of a tree sends shadows across the vehicle at normal intervals. The final touch is for the cameraman to let his camera waver slightly back and forth in order to provide the normal suggestion of "play" that would accompany an actual follow shot. The combination of these five or six elements produces a very realistic effect on the screen.

Special effects, if carefully executed, add greatly increased production value to any motion picture, whether it is a photoplay or commercial film. The main axiom to remember is: The smoother the effect, the less likely it is to be noticed by the audience.

NEXT ISSUE: Part 13—*Camera Tricks*

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Electronic bombardment, a new method of cleaning optical glass surfaces prior to coating, was recently disclosed by Collin H. Alexander, member of the process development division at Bausch & Lomb Optical Company. The process was designed primarily for aiding application of aluminum, the reflecting agent, to television and other first surface precision mirrors.

The ground and polished optical glass is placed in a metal holder in a high vacuum bell, where a tungsten filament, similar to the filament in an ordinary electric light bulb, is electrically heated to a temperature at which electrons are "boiled out." Since electrons are negative particles, they are attracted by the holder which is at high-plus voltage with respect to the filament. Thus attracted, the electrons bombard the glass at a speed of several thousand miles a second, leaving the surface entirely free of water and extraneous material.

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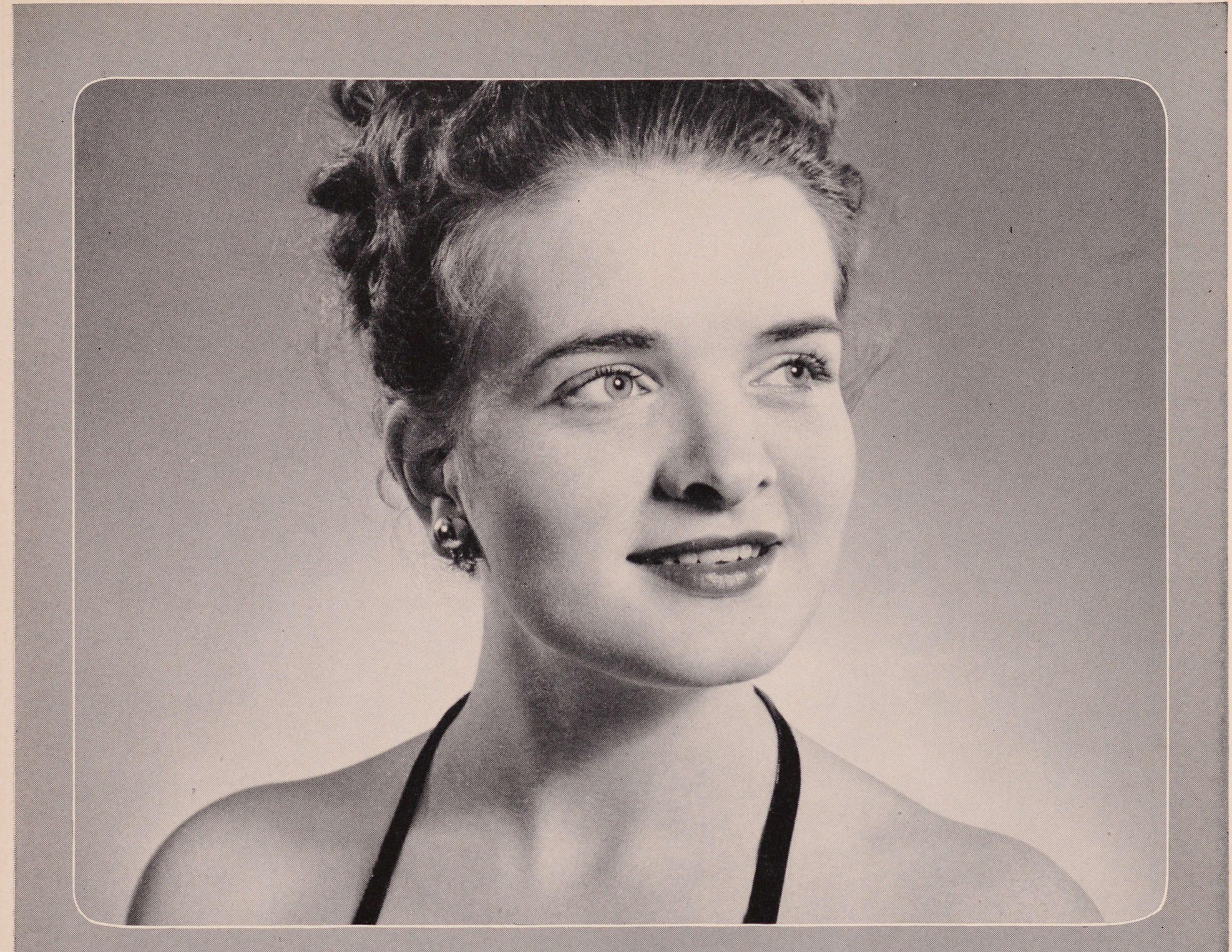

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